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HANDBOOKS OF PRACTICAL GARDENING—X
EDITED BY HARRY ROBERTS

THE BOOK OF CLIMBING PLANTS
AND WALL SHRUBS

HANDBOOKS OF
PRACTICAL GARDENING

UNDER THE GENERAL EDITORSHIP OF
HARRY ROBERTS

Illustrated, crown 8vo, 3s. 6d. net
38 Volumes

THE BODLEY HEAD



WISTARIA CHINENSIS

THE BOOK OF CLIMBING PLANTS AND WALL SHRUBS

BY

S. ARNOTT, F.R.H.S.

AUTHOR OF "THE BOOK OF BULBS"



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EDITOR'S NOTE

LIKE many another distinguished gardener, Mr Arnott is a Scotsman, being a native of Dumfries, and now living in the adjoining county of Kirkcudbright. For the last fourteen years his name has been a familiar one to readers of the leading journals devoted to gardening, for he has been a very frequent contributor to *The Gardener's Chronicle*, *The Gardener's Magazine*, *The Garden*, *The Journal of Horticulture*, and other papers. Although not a professional gardener, Mr Arnott is a practical one, for he manages at least the flower department of his beautiful garden almost without assistance; and having spent most of his life amongst flowers — his mother being a great gardener — he is a successful plant grower, as well as an interested one.

Mr Arnott takes an active part in the work of encouraging the gardening spirit among his countrymen, and is a member of the Scientific Committee of the Royal Caledonian Horticultural Society, as well as a member of other leading associations with similar aims.

He is the author of "The Book of Bulbs," which forms the fifth volume in the present series of handbooks.

THE BOOK OF CLIMBING PLANTS

CHAPTER I

INTRODUCTORY

The Value and Beauty of Climbers—Cheapness of Some—Nature and Habits—Plants Included—Nomenclature.

APART altogether from the interest which attaches to their habit of growth and the processes and contrivances by which they attach themselves to their supports, climbing plants are entitled from their charms to the appreciation of all who admire the beauty of plants in their varied forms. Even our native climbers contribute largely to the charms of our landscapes by the manner in which they clamber over trees, hedgerows and rocks, and none of us can see unmoved by admiration the wild Roses which climb among our hedgerows, the fragrant Honeysuckle which adorns many a scene, or the Traveller's Joy covering as with a cloud of foliage and flowers some quiet or unfrequented spot. Nor can we be unappreciative of the part played by the Ivy in the adornment of our ancient buildings, which owe much of their attraction in many cases to the veil of green which covers up their architectural or structural defects, and makes them assume perfect beauty in our eyes. In their own way these supply to our landscape the effects of the climbing plants of the tropics, though, as befits our greyer atmosphere and quieter landscapes, they are, it may be, less brilliant in their colouring than the showy flowers which cover

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the bushes or clamber up the trees of brighter lands. These tropical plants are with us the inmates of our greenhouses and stoves, and it is under glass that we can see their beauties and enjoy their delights. From more temperate climes, however, we can draw the climbing plants which will decorate our gardens and our walls, and which are as hardy, or nearly so, as our native plants which we can see in the woods and lanes of the country side.

It seems unnecessary to speak at length of the value of the climbing plants in our gardens and pleasure grounds. They are equally ornamental on the walls and terraces of the stately mansion, and on the humblest cottage, over whose low roof a mantle of Rose or Clematis sheds such a transforming cloud of beauty. They grace the garden walls, and take from stiff and hard lines their ugliness by fresh foliage, pretty flowers, and often pleasing fruit. The trellis may be draped with them. Over the garden paths they may depend from the archways, or the pergola may be their resting-place with its cloistered aisles overhung and shaded from the strong sunshine by their green leaves, which often look so lovely between one and the light, and decked by the blooms dangling from pliant stems or in clouds up the pillars. Then the arbour is both shaded and beautified by these plants, and they may be more widely used than they have been to give variety to the wilder parts of the grounds. A glen or a stream side may have its beauties heightened by planting alongside the native shrubs and trees some of the exotic climbers, which give grace and brightness and form a charming feature.

Then, too, what is a greenhouse, a stove, or a conservatory without a climber about it, to cover its walls, hang from the rafters or roof, or cover its bare pillars? It is a poor greenhouse indeed, which has not room for

at least one of these plants, even if it is impossible to use the Grape Vine with its beautiful leaves and its succeeding luscious fruit. In the pages which follow there is named a wealth of choice climbing plants for all such buildings; some are slender and graceful, while others produce huge, ornamental leaves and flowers more suitable for the great winter garden or conservatory than for the modest greenhouse of the amateur, who can draw from among the smaller-flowered or weaker-growing genera something to suit his purpose.

Nor is it necessary in growing climbing plants either in the open or under glass, to expend much money in securing their beautiful effects. How much may be done with a packet of common "*Nasturtiums*" as we familiarly call the varieties of *Tropæolum majus*! How much will eventually be covered by a plant of a pretty Ivy, costing only a few pence, or a graceful Clematis, which can be had for eighteenpence or less! The wealthy amateur who can afford to expend a large sum ought to purchase a large number of the choicest climbers and wall shrubs, but none who have gardens need be or ought to be without as many as possible of these valuable plants, whose worth for decorative purposes can hardly be overpraised.

The study of the nature and habits of climbers is a most interesting one, upon which a vast amount of light has been thrown by the researches and experiments of Charles Darwin, De Vries, and others. Naturally, in a work of this size, it is impossible to enter into such questions in detail, and those who wish to study the subject will do well to peruse carefully such works as Darwin's "*Movements and Habits of Climbing Plants*" (London, John Murray), where they will find much to interest and also much which will help them in cultivating these plants.

The development of the climbing habit appears to be

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due to the pressure of circumstances and the desire of nature to economise. The climber has generally to find its way to the light and air by aid of the support of other plants or surrounding objects of greater height, and had it not its lengthened stem and its climbing powers it would be strangled or destroyed by want of light and by being unable to absorb the carbon dioxide it requires. The elongation of the stem without additional thickness would have been insufficient from its want of power to sustain itself erect, and thus the powers of twining round or clinging to something which would support it were developed to aid in the struggle for existence. These powers are provided in the shape of a twining habit, tendrils, aerial roots, prickles, or hooks. Some writers are disposed to separate twiners from other plants with a climbing habit, but for gardening purposes they ought to be dealt with together. The contrivances by which these plants attain to the light and support their stems are varied in their character, and, though they might be divided broadly into a few classes, yet there will in a few cases be found some which possess a share of two or more means of climbing or supporting themselves and cannot therefore be classed with only one section. Yet they may generally be divided into twiners, tendril-bearers and leaf-twisters, aerial rooters, and those which support themselves by prickles or hooks or by simply scrambling among other and stiffer plants to reach the light. The *Convolvulus* is a familiar example of the twiner, while the tendril-bearing class may be represented by the Vine or the Pea. The Ivy is a good representative of the aerial-rooters, and in the Blackberry and the climbing Rose we have representatives of the plants which support themselves by means of their prickles. Darwin looks upon the tendril bearers as more highly developed than the simple twiners, and it is interesting to observe in these

the way in which the spiral form assumed by the tendril makes, as it were, a spring by which the strain is relieved when the climber or its host is exposed to gales which might tear them apart.

Even more fascinating is the study of the movements of the climbers in search of support. Some of the twiners revolve with, and some against the sun; some seek the light, and others shun it, so as to cling to something in the shade. Yet almost all have a revolving motion when in search of something to lay hold of. They sweep with regular motion the limited space they can reach and are thus afforded opportunities of reaching a support they could not have touched were they devoid of this power. Darwin has given much information on these points, and all growers of climbing plants would derive pleasure and profit were they to study his work carefully. From a purely gardening point of view one conclusion of the eminent scientist deserves attention. That was that some climbers upon which he experimented required to be well cultivated and placed under favourable conditions of all kinds in order to attain the full development of their climbing powers. This is an observation of some importance, showing as it does, that much of the non-success of some climbing plants in gardens is due to want of satisfactory conditions in the way of soil exposure, or of a suitable medium to which to attach themselves.

In this connection it must also be observed that some people err in thinking that all climbers will grow against similar objects, while Darwin's experiments prove that even different species of the same genus required supports of different thickness to meet their wants.

Besides the true climbers, twiners, and scandent plants which are cultivated in gardens as "climbing plants," popular usage has frequently classed with them in con-

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versation a number of plants which are devoid of any climbing propensities, but which are largely used for covering walls and other objects to which they can be attached by nails or other means of support. It has been thought advisable to include these plants, so as to make this volume as useful as possible.

On the other hand, some dwarf twining plants of little use for climbing and only serviceable in the garden for furnishing hanging baskets and such purposes, have been omitted.

In the preparation of this volume it has been my desire to include not only the climbing plants and wall shrubs commonly met with in private gardens, which almost everyone knows, but also a few which are rarely to be seen except in botanic gardens. Their presence in a garden would help to render it more interesting alike to its owner and his friends, and many of these plants, from their intrinsic beauty, are of the highest worth. Of course, a great number have been omitted which would have been included but for the necessity of keeping this work within moderate bounds. With the same object in view a large selection of climbers has been given in tabular form at the end of the volume, with information regarding their colour, the temperature they require, and the time at which they bloom. In some cases these are not mentioned in the chapters containing the general remarks for the corresponding classes, and in these instances it is to be understood that they are amenable to the ordinary treatment recommended in the chapter on soil, etc.

The cultural directions, though necessarily brief, will supply as much information as is absolutely necessary for those possessed of a little knowledge of the principles and practice of plant cultivation. These will understand the necessity of varying the treatment under diverse circumstances.

The nomenclature is generally that of the *Index Kewensis* and the Kew Hand-lists, though these have not been always followed in some cases where the garden names are too firmly fixed to be readily superseded.

CHAPTER II

SOIL, PLANTING, AFTER-MANAGEMENT AND PROPAGATION

Errors in Planting—Preparing Station—Soil—Manures—Planting—Feeding—Shade—Pruning and Training—Supports—Enemies and Remedies—Under Glass—Propagation.

It is much to be regretted that, as a rule, the requirements of climbing plants are but imperfectly considered in gardens.

They are often planted, with the most meagre preparation, in poor soil, either composed largely of the rubbish filled in after the building of the house, or that which has been impoverished by other plants. In either case it is hopeless to expect the free and luxuriant growth which constitutes one of the beauties of such plants. On the contrary, they are often stunted and unhealthy in appearance from neglect in these and other ways. Nothing is more common than to see them turned out of small pots into a hole little larger than the pots they have occupied, and without any preparation having been made for the extension necessary for the roots if the climber is ever to become healthy, vigorous and beautiful. Even where a little attempt is made to secure this it is often absurdly inadequate, and the roots are checked by the mass of hard, poor soil with which they eventually come in contact. It is better to make too much preparation than too little, and when planting climbers in the open to make a large and deep hole from three to six feet across and about three feet deep, filling it up with good

loam, with the addition of some manure, some of which ought to be well worked into the subsoil.

There is nothing better than a good sound loam for the growth of the greater number of climbing plants, and unless advised otherwise, this, with the addition of manure, should form the basis of the compost. As a general rule, there is no fertiliser which equals thoroughly rotted animal manure, that from the cow-house being the best for light, dry soils, and that from the stable the most beneficial for those of a heavy nature. In stiff soils some leaf-mould and peat are often beneficial. Artificial manures may be used, where the others are not available, in the proportions recommended on the packages of those of a proprietary nature, which are generally the safest to be used by amateurs. A considerable proportion of bone meal is also desirable and supplies the permanent nourishment wanting in some of the artificials.

If the climbers have been growing in pots they may be planted out at almost any season, but others may be planted either in autumn or spring, the former being the best season for districts where drying winds prevail at the latter season. In case of severe frosts they should be slightly protected for the first winter.

In planting, those which have been grown in pots ought to be turned out carefully with the ball of soil intact, except that the roots may be spread out, so far as this can be done without removing all the soil from the ball. The others should have the roots carefully spread out at their full length and not crushed or crowded in any manner. Any injured roots ought to be carefully cut with a sharp knife, removing the bruised portions. After planting, the soil, which should not be too wet, must be firmly trodden or pressed down and the climbers properly fixed to their supports. Tedious as these directions may seem, their fulfilment will be

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found to repay the planter in the greater rapidity with which the plants will become established and the quick manner in which they will cover their allotted space, compared with those planted with insufficient preparation.

Sometimes it is necessary to plant climbers in positions where the soil is already so permeated with the roots of trees or shrubs that a newly-established plant has little chance of obtaining the nourishment it requires. It is, in such cases, advantageous to sink a bottomless cask in the soil and fill it with a suitable compost so as to give the climber time to establish itself and strength to compete with the other roots.

While the proper preparation of the site for a climber is of the highest importance, it is also needful to give it regular supplies of nourishment when it begins to exhaust the provision made at planting. Too often this is forgotten, and the once free and vigorous plant shows signs of failure and decrepitude. Mulching with decayed manure and top-dressing with fresh soil and artificial fertilisers are beneficial, and, where it can be applied without being offensive, liquid manure will often work wonders in restoring health and vigour. In many positions, such as under the eaves of a dwelling-house or against warm walls, climbers frequently suffer much from drought, and they ought to be well watered in dry weather, giving plentiful soakings and not mere superficial waterings on the surface. Where this is necessary, the need for a stimulant in the way of liquid manure or a top-dressing of a good artificial manure is all the greater, as the frequent waterings tend to exhaust the soil by washing the manures into the sub-soil.

While, as a rule, those who plant climbers desire an immediate effect and should therefore attach them to their supports at once, it has been found that a few climbing plants, such as the *Wistaria*, grow eventually with more rapidity if they have been laid along the

ground for the first season. This point is worthy of more consideration than it has received. Another recent discovery is that a certain number of climbing plants, of which the Clematis may be cited as an example, require to have the lower part of the stems shaded from the direct effects of the sun, especially when newly planted and when the flow of sap is consequently less plentiful. This shading can be easily afforded by planting some low shrub or herbaceous plant in front.

In some positions, such as rambling over a tree or among other things in the wild garden, climbing plants are best left unpruned and with but little interference. Yet it is seldom that this can be done without lowering the beauty of the effect they produce, and pruning or training of some kind is usually required and is almost always needful if the plant is to be seen at its best. Even the freest rambling Rose clambering up some tree is improved by cutting out some of its weak wood and removing all that is decayed. It is no addition to its charms to see a great dead branch projecting from the cloud of flowers, and thus a little timely attention will add greatly to the attractions of the plant. So, too, while Clematis Jackmanni and some others of free habit look very beautiful when rambling of their sweet will up a trellis or over an arch, a little timely training will make them more pleasing still; while a careful study of the needs of the plants in the way of pruning will give results which will surprise those who have not fully considered the benefits derived from this necessary operation.

Formality of training is especially to be avoided with climbing plants, but, in general, there is less of this than of neglect in restraining them so as to induce them to put forth their best features. One may instance the difference caused by regular clipping of Ivy on walls when compared with the results of the common practice

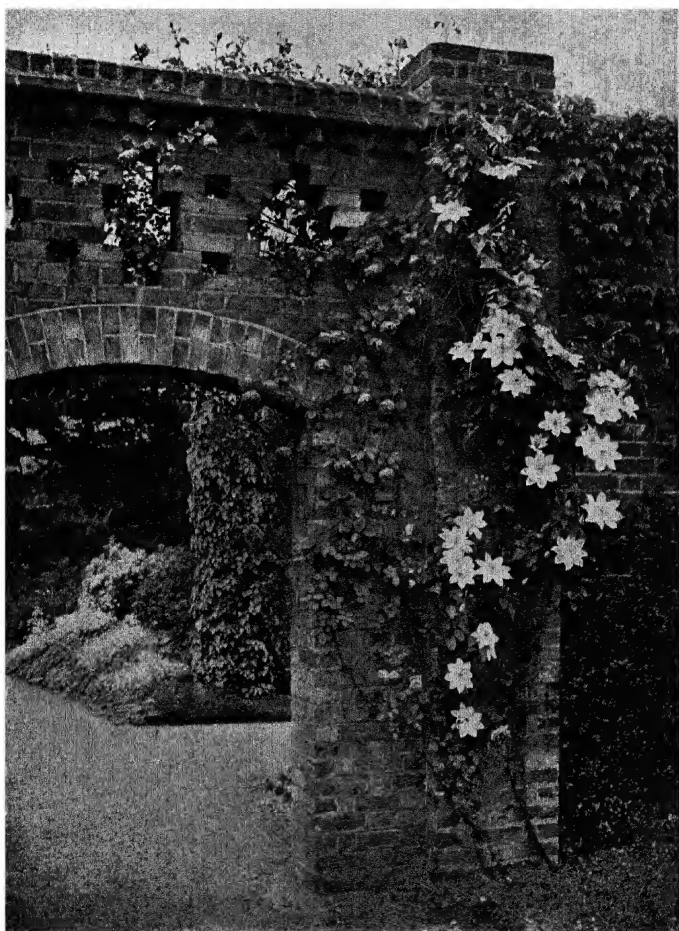
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of leaving it to grow rampantly until it requires a drastic treatment which will spoil its beauty for a long time.

It is impossible to detail the respective methods of training and pruning all these plants. Some flower on the older wood, and, in these cases, the strong growths should be left and the weak ones cut out with all decayed wood. Others, again, bloom on the young shoots of the current year. In this case, the old ones ought to be cut out and the fresh, young shoots encouraged. Some flower on spurs produced from the old wood, and are best treated by cutting out a number of the weakly shoots and shortening those left. In all cases a study of the particular species is necessary, as all the species in one genus do not always give the best results under the same treatment in the way of pruning. In the following pages some guidance is generally given where it is thought necessary, but it may be remarked that many amateurs do not prune early enough, and often leave until autumn or spring what should be done as soon as flowering is over.

Supports for outside climbers deserve a few remarks. All walls are not of equal value as affording a suitable medium for the support of such as attach themselves to them. The least satisfactory is one whose surface is covered with cement, and it is with great difficulty that plants with aerial roots can attach themselves to this. Unpainted stone or brick makes the best walls, the latter being the warmer. It is often necessary to fasten the plants to the walls at the outset, and this may be done by means of shreds or, preferably, with some of the patent wall nails, which have soft metal tops, for bending round the stem of the plant.

Trellises are favourite supports for wall plants and afford an ornamental support for climbers which require tying or which can attach themselves to them by means of their tendrils. Wire trellises are favourites with



CLEMATIS, FAIRY QUEEN
(Photo by E. J. Wallis)

many, and certainly possess the important merit of permanence and of requiring little expense to maintain them. The writer greatly prefers the appearance of those made of timber, which, also, seem to be more acceptable to the plants themselves. Wire trellis ought always to be painted so as to keep the frost from having the effect on the plants it would have were they left exposed.

Wooden trellis is very inexpensive, and its duration will be all the greater if it receives one or two coats of paint before being nailed together. A common thickness is a quarter-inch, but a little more is advisable. Three coats of paint are necessary at first, and one of raw linseed oil before painting will repay the outlay. Ready-made trellis is largely used, and is generally of good quality, while it is considerably cheaper than if made to order by an ordinary carpenter. Where it has to be affixed to posts sunk in the ground, the latter should be creosoted, tarred, or charred at the base and, if possible, fixed in concrete.

One of the best methods of training climbers to walls is by means of galvanised wires attached to spikes with eyes and tightened with a raidisseur at one end. There are several suitable kinds of spikes and raidisseurs. These wires are also suitable for climbers grown under glass.

For such climbers as *Clematis flammula* a good support is supplied by fixing lengths of wide-meshed wire netting to the wall, an inch or two from it, each length being fastened to the next by tying wire.

For archways and arbours either wire or wood may be used, and the wire arches sold in such quantity do very well, though buyers sometimes make the mistake of purchasing an arch which is too low in the centre, with the result that the climbers are in the way of those passing beneath. Seven or eight feet will be more suitable than six. Rustic arches are expensive, and need not be of an elaborate character where they are

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to be entirely covered by the plants. A simple arch of four upright poles with cross ones will do perfectly well for many things.

The pergola is rapidly becoming a favourite erection in gardens and owes its chief interest and beauty to the climbers which are trained to its pillars and shade its pathway. The pergola might be introduced into more gardens with advantage, but it ought always to be in such a situation that it forms either the entrance to a part of the garden or a pleasant feature of some path which leads to a definite object, instead of being, as some are, without an apparent *raison d'être* beyond that of affording a purely scenic effect. The structure of the pergola will depend upon the means of the owner, and may be an elaborate stone or brick erection, on which are laid cross beams of wood or trunks of trees to which the climbers are attached. Or it may be a simple erection of larch or other poles with others laid lengthways and crossed by similar poles. Light iron pillars bearing timbers can also be used, but the wooden pergola is generally the prettiest and the most welcome to the climbing plants. The uprights may be bedded in concrete in the soil or have their ends tarred or charred to preserve them.

For a pillar, nothing looks so well as an unbarked tree of moderate thickness, but iron ones, either plain or formed of lattice work, are sometimes used. Other more or less elaborate contrivances, such as a stout central pole with chains radiating from it, are also formed.

Climbing plants are subject to the attacks of various pests, both in the open and under glass. In the open these enemies are usually worse on a wall than elsewhere, and the less it is covered with foliage the greater the difficulty in keeping the plants free from them.

Aphides are the causes of much annoyance and loss,

but may be destroyed by one of the many prepared insecticides now in the market, which are usually in a convenient form for use, and are efficacious if applied according to the maker's directions. A good preparation is made from one pound of soft soap and one pound of Quassia chips boiled in three gallons of water for about three or four hours, strained, mixed with other three gallons of water, and applied warm.

Under glass, fumigation, is usually the most suitable way of dealing with Aphides, and the old remedy of tobacco-paper is becoming superseded by XL ALL or other insecticides, which are more safely and conveniently applied.

Red spider is often troublesome, especially under glass, and may be dealt with by Gishurst Compound or one of the numerous preparations for the purpose, as well as by dusting flowers of sulphur on the leaves, or using such a solution as one pound of flowers of sulphur to two pounds of quicklime, boiled in four gallons of water.

Fumigation with some insecticide is also efficacious under glass; while walls on which pests have gained a hold may be cleansed by mixing one pound of flowers of sulphur and two ounces of soft soap with clay and soot mixed with water to the consistency of paint.

Mildew is also very troublesome, and Bordeaux Mixture is one of the best remedies for plants outside. It is poisonous, and a wise precaution is to refrain from applying it to fruits within some weeks of their being gathered. A good recipe for its preparation is 1 lb. quicklime, dissolved in cold water, with 1 lb. sulphate of copper, dissolved in a little hot water, added together when cool to 10 gallons of water, and applied with a spray, stirring thoroughly. Some add 1 lb. of treacle to the lime, as it slacks, to enable it to adhere more firmly.

Scale and mealy bug are bad pests under glass, and may be destroyed by such things as Kerosene Emulsion,

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Fir-tree Oil, or Gishurst Compound, applied precisely as directed on the packages. This is essential, as many plants are injured by not adhering to these directions.

In most cases it is much better to purchase some of these proprietary preparations than to make one which might be improperly compounded or made from material not fresh and thus ineffective.

UNDER GLASS

Where the structures are so arranged that the climbers can be planted in a specially prepared bed, they are generally more satisfactory and more healthy than in pots. The bed should be thoroughly prepared, properly drained and filled with a compost of good, mellow loam, leaf soil and decayed manure, with some bone meal. In this bed the climbers ought to be carefully planted in a firm manner.

It is not always possible to plant climbers out under glass, and they may therefore be grown in large pots or tubs, filled with such a compost as above described. Since the soil will soon become exhausted from becoming filled with roots, as much of the old soil as possible should be removed without taking out the plant, and replaced by fresh earth. Occasional waterings with liquid manure or water in which an artificial fertiliser has been dissolved, are necessary to maintain the plants in health when the pots become filled with roots.

The necessity of repotting may be retarded by fitting a zinc ring on the top of the pot or tub, and filling this up with fresh earth. This will delay what is frequently a troublesome task when the climbers are trained to the walls or roof.

Wire trellises, or wires strained along the walls, roof or rafters, are the best method of training climbers under glass. The wires should be a few inches from the glass

for roof climbers, and a little off the wall for those trained against a trellis. Many plants of climbing habit are frequently trained to balloon-shaped wire frames. Several other designs for such trellises are also employed for the purpose of training such plants where not wanted to grow to a considerable height, and often for exhibitive purposes.

Plants of a twining habit should have cords or wires to twist round unless trained to branches.

If careful training is desirable for outdoor climbers it is even more necessary with those under glass, and care must also be taken that their growth is not too thick for the plants beneath those on the rafters.

Ventilation also requires some consideration, and as a planted-out climber cannot be removed to another part of the house, climbing plants ought to be in such a position that they will not be subjected to draughts of cold wind when the ventilators are open.

As is to be expected, climbing plants grown under glass are subject to various pests, which must be dealt with promptly and before they have taken possession of the plants. The "stitch in time" is very essential with plants which cannot be taken out of doors, and cannot be dealt with except in their present position. Aphides, mealy bug, scale and the other enemies of these climbers must be dealt with by using the various remedies known to gardeners. A foul roof plant is sure to tell badly by infecting the flowers below. Fumigation ought to be done on the first sign of green fly.

In the chapters devoted to the various classes of climbing plants the suitable methods of propagation for each genus are stated in a brief way, for convenience, but it will be advantageous to deal shortly with the general modes of propagation applicable to such plants as a whole.

Annuals are, as a matter of course, propagated from seeds, and this is also a suitable and profitable manner

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of raising any of the perennials which produce seeds in this country, or of which fresh imported seeds can be procured. Seeds of hardy climbers can be sown on a prepared bed of fine soil from April to the beginning of July in the open, and in pots, pans or boxes under glass earlier in spring in slight heat. The seeds of the more tender ones can be sown in a hot-bed or with bottom heat from February onwards. The soil must be rich and light, with a large proportion of leaf-mould and sand. The depth to which the seeds are covered depends upon their size, the smaller seeds being only slightly covered with fine soil.

Cuttings are also convenient means of propagating the perennial climbing plants, and directions regarding the greater number which can thus be increased appear in other chapters. Some strike better from young shoots, with or without a heel of the old wood, while others do best from the half, or wholly ripened wood in autumn. The cuttings of hardy climbers may be put into a cold frame or struck under a handlight or glass in the open, and shaded from sun until they have rooted. Most of the tender ones do best struck in sand under a glass in heat. Grafting on the stocks of the commoner species is a common method of propagation with some varieties. For many climbing plants layering is a most suitable means of increasing the stock, their habit of growth generally making it convenient to lay one of the stems or branches along on the soil, pegging it down, and covering the place with some light soil, kept moist until roots are emitted, when the plant may be cut off from the parent. They may also be layered in pots for greater convenience in removing. Spring and autumn are the best times for layering. Root division answers well for the herbaceous climbers and a number of others, while those which produce suckers are easily dealt with by removing these from the parents in spring or autumn.

CHAPTER III

ANNUAL CLIMBING PLANTS

Value and Uses—Perennials treated as Annuals—Hardy Annuals—Preparation of Soil—Sowing Seeds—Thinning out—Tropæolums—Sweet Peas—Ipomœas—Maurandya—Amphicarpæa—Echinocystis—Half-hardy Annuals—Sowing—Ipomœas—Eccremocarpus—Gourds—Cobæa—Thunbergia—Mina—Passiflora—Japanese—Hop—Adlumia—Grammatocarpus—Dolichos—Tender Annuals—Ipomœa—Citrullus—Porana—Sowing.

WHILE perennial climbing plants are more useful as a whole, the annuals of similar habit have many claims upon our notice, both from their beauty and because of the value they possess for ornamenting places where perennials would be out of place. They may also be used temporarily for positions which will eventually be covered with perennial climbers which have not become sufficiently established to cover the desired space. For this purpose, those of a slender and non-encroaching character are to be preferred so as to avoid weakening and injuring the growth of the permanent ones. In the table of suitable plants the annual climbers have been divided into Hardy Annuals, Half-Hardy Annuals, and Tender Annuals. In the lists are also included some plants of perennial habit, but which will flower the first year from seed. These are frequently too tender to stand the winter of a great part of the British Isles and are thus most satisfactorily treated as annuals. The *Eccremocarpus* is one of these, although it will not only survive the winter but will occasionally remain evergreen in the milder coast districts. The common

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Tropæolum is also a perennial in a warm house, though it is one of the most tender of annual climbers generally grown outdoors.

The list of hardy annual climbers which may be safely treated as such and are sown in March and April outside where they are to bloom, is comparatively short. It may, however, be supplemented by those which are half-hardy, which may be sown outside when April is almost at an end, and even earlier in warm districts.

The preparation of the station for these annual climbers ought to be thoroughly done if the best results are desired. Even the common *Tropæolum majus*, which will thrive on almost any soil, will attain a much greater height and cover more space if in rich, well manured soil, and it is desirable to have the place well and deeply dug and manured with thoroughly decayed manure, before sowing the seeds. The seeds ought to be covered with fine soil to a depth of rather more than their own thickness, though that is enough for those sown in pots, pans, or boxes, and placed under glass to germinate.

Unless done previously, as soon as the young plants appear the support to which they are to attach themselves ought to be placed in position, and when of sufficient size the young plants led to it if they have shown no signs of attaching themselves. As soon as they can be handled they ought also to be well thinned out, remembering always that one well-grown robust climber will give better results and cover as much or more space than half-a-dozen which are too close and have not sufficient room to develop.

HARDY ANNUALS

Common though it is, there is no more effective hardy annual climber than the *Tropæolum*, as represented by

T. lobbianum, or the common *Nasturtium* of gardens — *T. majus*. The former is the preferable of the two, as it has smaller foliage and more flowers, and altogether gives a much better effect. The slight additional cost of the seed is well repaid. It seems unnecessary to name the varieties of these *Tropæolums*, as the best will be found offered at a reasonable price in seedsman's catalogues, which those who wish separate colours may study. Many prefer the mixed varieties, but a finer effect is often produced by planting separate colours, such as the fine scarlet *T. l. cardinale*, the dark-foliaged scarlet *Fulgens*, the spotless yellow *Golden Queen*, the ivy-leaved scarlet *hederæfolium*, or the new *Princess Victoria Louise*, with its creamy flowers blotched with orange-scarlet, and with orange-red calyx and spur.

Ever popular, too, is the Canary Creeper, *T. peregrinum* or *aduncum*, whose beautiful yellow flowers, on equally attractive foliage, decorate so many walls in summer and autumn.

Still more popular, and more useful as yielding so many charming flowers for cutting, is the Sweet Pea, as *Lathyrus odoratus* is universally called. It does not ascend so high, however, as the *Tropæolums*, but is exceedingly useful for covering low walls, trellises, and rough hedges, draping them with its leaves and exquisite flowers. The bush forms and the Cupid Sweet Peas are, of course, of no use for climbing, and some day some one will possibly make it more useful for our purpose by raising still taller kinds. The removal of decaying flowers or seed-pods is even more necessary when the Sweet Pea is used as a decorative climber than in any other way. Another favourite, which some class as a half-hardy annual, is *Ipomœa purpurea*, the common climbing *Convolvulus major* of gardens. Its correct name of *I. purpurea* is rather misleading, as this twining plant, which should be supplied with string or twigg

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branches to twine about, yields many varieties, ranging from the white alba, through various shades and colours, to deep blue and crimson. *Burridgei* is a good deep crimson, *Dicksoni* a deep blue, and *rosea* a fine pink. *Maurandya barclayana* is another very attractive plant when treated as a hardy or half-hardy annual. It is generally grown in mixed colours, though the type is violet and is very useful and pretty as a climber. Other less known hardy or half-hardy climbing annuals are *Amphicarpæa monoica*, with pretty violet and white flowers, and the white-flowered, spiny-fruited *Echinocystis lobata*, a gourd-like plant classed by some in this class of annuals, though, perhaps, better treated as half-hardy.

HALF-HARDY ANNUALS

All the climbers already named may be treated as half-hardy and, like those which follow, may be sown on a mild hot-bed or a close unheated frame in March or early April. They can also be sown in pans or boxes in a greenhouse, if kept near the glass after the seedlings appear and are supplied with fresh air. For later flowering they can be sown where they are to bloom in the end of April and beginning of May. If raised under glass they ought to be hardened off before planting out, and after being pricked out a little distance apart in boxes.

The half-hardy *Ipomœas* are among the most desirable, and the newer forms are even more appreciated than the varieties of *I. purpurea* already referred to. Those sold in the seed trade as *I. grandiflora*, which are varieties of the charming *I. Bona-Nox*, are among the prettiest with their large flowers, called by the way, "Moonflowers." *Alba* and *Hesperus* are among the finest of the white ones. The new class called *Imperialis* is a very beautiful

one and comprises fringed flowers of great size and in many colours besides those of the ordinary *Convolvulus*. These are said to have been raised from *I. hederacea*, a species of *Convolvulus* with Ivy-shaped leaves. *I. h. Huberi* is a class with the leaves mottled with white. The *Eccremocarpus* or *Calampelis* is another favourite which will bloom the first year from seed, though perennial in mild gardens. It has racemes of flowers of considerable beauty. The best species is *scaber*, with orange-coloured flowers; its variety *roseus* has pretty rosy blooms. For a sunny trellis there is little to surpass it.

The Ornamental Gourds are a host in themselves, and ought to be more largely cultivated for the curiosity and beauty of their fruit, which assumes so many singular forms. Among the *Cucumises* there are the interesting *Cucumis acutangulus*, the attractive *C. Dudaim*, with mottled Melon-like fruit, the spiny Hedgehog Cucumber, *C. erinaceus*, or the pretty Gooseberry Gourd, *C. myriocarpus*, with its small fruits. The Malabar Gourd, *Cucurbita melanosperma*, produces fine variegated, fruits, while *C. Pepo* is attractive from the profusion of small fruits it yields; of these many varieties can be procured, such as those with Apple-like fruits, those with egg-shaped, warted, or Pear-shaped fruits, besides a number of others. The warted-fruited orange *Momordica Charantia* is also desirable, as are *Trichosanthes anguina* and *Cyclanthera pedata*. Among the most desirable of climbers which flower the same year as sown are *Cobæa scandens*, which has beautiful bell-shaped violet-blue flowers, and the charming, slender-growing *Thunbergia alata* in mixed varieties of various shades of yellow, orange and white. These are charming either in the open or under glass. The pretty plant known as *Mina lobata* is properly *Ipomœa versicolor*, and few fail to admire its ornamental racemes of pretty red or crimson flowers. The annual *Passifloras*, *gracilis*,

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white with red fruit, and lutea, yellow, might be tried for a change from more common things in a warm, sheltered corner.

There are some who want a climber with rapid growth and with ornamental foliage. Such will find the Japanese Hop, *Humulus japonicus*, just what they want. It grows quickly and will soon cover a large space with its fine leaves, while the variegated form with its white-blotched leaves will suit those who desire an easily raised foliage plant for covering a large wall or trellis in a short time. The biennial *Adlumia cirrhosa*, a slender growing Fumitory, is worth having, but it must, of course, be sown the year before it is wanted to bloom, and be wintered under glass. It has pink blooms. One may also mention the yellow annual *Grammatocarpus volubilis* as an interesting twiner, and, for a variety, some may care to grow as an annual the Lablab, *Dolichos Lablab*, which has violet flowers, succeeded by bean-shaped pods. There are several varieties of this plant now offered.

TENDER ANNUALS

A considerable number of tender annuals of climbing habit suitable only for growing under glass are not in commerce, and it appears to be unnecessary to say anything about these. Nearly all in the other classes can be serviceably employed for the decoration of the conservatory, and will give much gratification to their owner. One may mention, however, the pretty *Ipomœa Quamoclit*, often called *Quamoclit vulgaris*, or the Cypress Vine, as more suitable for growing under glass than in the open in many parts of these islands. It has pretty scarlet flowers. *Citrullus vulgaris*, the Water Melon, may also be employed in the stove or inter-

mediate house. *Porana racemosa*, with white flowers, is also worthy of a trial, but the bulk of the most ornamental annual climbers in cultivation will be found among the half-hardy species. All should be sown in heat and grown on under glass, being allowed plenty of space and good soil.

CHAPTER IV

HARDY DECIDUOUS AND HERBACEOUS CLIMBERS

The *Vitis*—*Ampelopsis*—*Wistarias*—*Loniceras*—*Apios*—*Rubuses*—*Jasminums*—*Aristolochia*—*Hydrangea*—*Schizophragma*—*Muehlenbeckia*—*Lyciums*—*Periploca*—*Polygonum*—*Lathyrus*—*Calystegias*—*Convolvulus*—*Cynananchum*—*Actinidias*—*Decumaria*—*Celastrus*—*Hablitzia*—*Humulus*—*Ipomœa*—*Cucumis*—*Megarrhiza*—*Menispermum*—*Mutisias*—*Tropæolums*.

IN this large and important division of climbing plants there is more than sufficient choice to satisfy the most ardent lover of such beautiful subjects. They include among them plants of great diversity of character and are adapted for many purposes. In cold districts they form generally the most satisfactory section of climbers with the exception of such evergreens as the Ivy and a few others, or some of the wall shrubs not of true climbing habit.

One of the most important genera is that of the *Vitis*, or Vine. This really includes the greater number of the plants grown as *Ampelopsis*, but the force of habit is so powerful that it will be long before these will be known by any other name, so that they are kept distinct here. It is needless to say much in favour of the Vine. Apart from its merits as a fruiting plant, and cultivated simply for its decorative foliage, its principal use in the open garden, it is one of the most beautiful of deciduous climbers for the wall, the arbour, the trellis, or for clambering up a tree, as in any of these positions the fine leaves are ornamental either in summer or, more

particularly, in autumn, when it assumes its glorious autumn tints. The varieties of *Vitis vinifera*, the European Grape Vine, are most attractive, but there are others of more striking beauty and of greater distinctness. In the table of Hardy Deciduous and Herbaceous Climbers at the end of this work there is a list of some of the finest of these, and space will not allow of detailed descriptions. Any will give pleasure, but among the finest of recent introductions is *V. Coignetia*, whose handsome foliage is admired by any one. Its vigorous growth makes it suitable for almost any purpose for which tall climbers are desired. Further reference to the Vine is rendered unnecessary by the "Book of the Grape," published in this series, which may be consulted by those desiring to make a study of these fine climbing plants or who wish to try them as fruiting climbers out of doors.

The Ampelopsis, or Virginian Creeper, as it is popularly called, is a great favourite with everyone, and the introduction of that known as *A. Veitchii*, or *tricuspidata*, whose correct designation is *Vitis inconstans*, has greatly popularised the family, because of its self-clinging habit, not possessed by *A. quinquefolia*, or *hederacea*, the older "Virginian Creeper." There is an effective variety named *purpurea*, which has darker leaves, assuming an even deeper hue than the ordinary form in autumn. So well known a plant needs no further reference. Another very desirable self-clinging Ampelopsis is *A. muralis*, which grows rapidly and has large leaves, which are of great beauty of colour in autumn. Another, sometimes sold as *A. Hoggii*, is really the Japanese form of *Rhus Toxicodendron*, and pretty as is its crimson and yellow autumnal foliage, it should be avoided by those who are sensitive to the irritant properties of some plants. Coming in contact with it will cause a stinging sensation of a most annoying

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kind to such persons, though the writer handles it at various seasons without any discomfort arising. Though it has no tendrils to enable it to cling to a wall, the old *A. quinquefolia* is very handsome, and may be made use of in many ways, such as among the branches of a dark-leaved tree to lighten it up with its fiery autumn tints, or among some rambling early-blooming Roses, or even over an arbour. Its large leaves and fine tints, especially in a dry soil, make it valuable. *A. aconitifolia*, which has a number of synonyms, among them being that of *Vitis dissecta*, is a pleasing plant with reddish branches and pretty leaves. All of these *Ampelopsis* will grow in any soil, but often colour more beautifully on a dry, than on a rich one. They are propagated by seeds, sown under glass in spring, by cuttings under a glass, or by eyes like Vines. The self-clinging species require little training except keeping them within bounds, but the others may need to be guided among the branches which are to support them, and if trained to a wall will require to be fastened to it.

One of the most delightful and effective of our flowering climbers is the *Wistaria*, whose bunches of fine flowers are greatly admired, especially when the plant has attained a considerable size and has been properly attended to in the way of training. There are not many species recognised by botanists as such, and it is doubtful if some of these even are anything but varieties of the one known as *W. chinensis*. However this may be, all are worthy of being grown, and intending purchasers may choose any from the table at the end without scruple, though *W. c. alba* generally flowers with rather less freedom than the coloured forms. It is pretty to associate with the others, and is always charming with its long racemes of drooping flowers. The form called *multijuga* is one of the

finest, and there is another variety of *W. chinensis* with silvery variegated leaves. The *Wistarias* are propagated by layers, and those grown on walls are best pruned by filling up the space by the branches and cutting back to these to encourage the production of flowering spurs.

The *Loniceras* or Honeysuckles are also general favourites because of their fragrance. Some are not climbers, but among the best of the climbing species are the varieties of *L. Periclymenum*, the common Honeysuckle; the yellow-flowered *Caprifolium*, also with fragrant flowers; the pleasing *etrusca* with yellow and purple-scented flowers; the light-yellow *flava hirsuta*; and the favourite *japonica* with reddish flowers, its variety *flexuosa*, also called *brachypoda*, which is yellow; and the pretty golden netted foliaged form of *japonica* named *aureo-reticulata*, which, however, requires the shelter of a cold greenhouse in some neighbourhoods. When grown on warm walls some of these Honeysuckles are much infested with aphides, unless occasionally washed with some preventative insecticide. They are most pleasing rambling up a tree or over an arbour. Another pretty arbour plant, though not brilliant in colour, is *Apios tuberosa*, a hardy tuberous plant with fragrant purple-brown flowers, more attractive than this description of their colour would indicate. For an arbour or low trellis it is a desirable climber.

The *Rubuses*, or Brambles, are not sufficiently appreciated as wall or climbing plants, especially the double-flowered forms of our common Blackberry or Bramble. These are called *albus plenus* and *roseus plenus*, the former having white flowers and the latter beautiful light rosy blooms. They are as easy to grow as our common typical species *fruticosus*, and look very beautiful indeed. Those who wish to combine the useful and the ornamental may grow the Parsley or Cut-leaved Bramble, *R. laciniatus*, which gives a good

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crop of fruit as a rule, and is ornamental with its deeply-cut foliage. It is a better fruiter in cold neighbourhoods than the American Blackberries, which generally give larger fruit. On some sheltered walls in warm neighbourhoods the low-growing *R. australis*, which has pink or white flowers, is remarkably interesting with its leafless, spiny branches. The double *rosæfolius coronarius*, with white blooms, is also pretty; and the showy *spectabilis*, which has red flowers, is worthy of a good place on a wall. *R. phœnicolasius*, the Japanese Wineberry, is very ornamental with its decorative stems and branches and its bunches of scarlet fruit, which succeed the small pinkish-white flowers. Birds are remarkably fond of the berries. *Biflorus* and *leucodermis*, known as the "Whitewashed Brambles," from the white bloom on their stem and branches, are good plants for winter effect in the shrubbery. Their flowers are white.

Everyone knows the Winter-flowering Yellow Jasmine, *Jasminum nudiflorum*, whose leafless, drooping branches are so gay with bloom in midwinter or early spring. It looks at its best when it has a background of some dark evergreen wall climber, such as Ivy. Then its white congener *J. officinale*, one of our sweetest flowers, is equally well-known, while in *J. humile* we have a pretty summer-blooming, yellow-flowered species. It is easily propagated by layering or by cuttings struck in a shady border under a handlight, and is the better of a little thinning out of the weak branches and of cutting back those which are of too great length for their position. One of the most effective of our deciduous foliage climbers is *Aristolochia Sipho*, the Birthwort, whose large, handsome leaves are of striking effect on a wall or a pergola, or almost in any way in which a vigorous climber can be used. The curious flowers are yellow and brown, but its attraction in our climate

depends on its leaves. It is thoroughly hardy. Two climbers of great interest, but which seem to flower badly as a rule in our climate, are the climbing Hydrangeas, as they are called. The first, *Hydrangea petiolaris*, is a little tender and ought to have some protection. It has white flowers. The other, *Schizophragma hydrangeoides*, has white or pinkish flowers, and is a capital climber, but has the pronounced fault of unsatisfactory flowering in the open, even on a sunny wall. They like common soil with a little peat and plenty of moisture. Another pretty plant which flowers unsatisfactorily, though its greenish flowers are of little account, is *Muehlenbeckia complexa*, more suited for a trailer than a climber, but which can be grown over tree stumps or trained up a wall. Its foliage is ornamental, and it makes a nice covering of deep green. Good foliage plants also are the Lyciums, or Tea trees, of which two of the best are *barbarum*, which has small purple and yellow flowers, and *europæum*, which has pale violet blooms. They look pretty on a trellised wall, are hardy, and can be propagated by cuttings or layers. *Periploca græca*, the Silk Vine, is a decorative plant for covering a space quickly. Its foliage is pretty, and the greenish flowers, which are brown inside, have silky hairs about them, which give rise to its popular name. It grows best from layers, but may also be propagated by cuttings under a hand-light in summer.

One of the climbing plants of comparatively recent introduction which have deservedly attracted some notice, is *Polygonum baldschuanicum*, a pretty, slender climber with white flowers. It is a capital thing for climbing over a bush or about a thin pole.

The Lathyruses or perennial Peas are of great consequence among herbaceous climbers. Had they only the fragrance of the Sweet Pea they would increase in favour more rapidly than they have done. Grandi-

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florus has the finest flowers, and it is of less rampant growth above than latifolius, though it makes up for this by running a great deal at the roots. It must thus be planted where it is not likely to encroach on other things. It has rose flowers of considerable size, produced generally in pairs. Quite distinct is the broad-leaved Everlasting Pea, *L. latifolius*. The typical form has rose flowers, but there are also a number of pretty varieties, such as *albus*, white; *delicatus*, pale pink; and *splendens*, deep rose. It is a vigorous grower in a dry sunny place, and does well in a hedge when once established. Other good perennial Peas are *nervosus*, blue-purple, and *rotundifolius*, rose; *pubescens* is a charming pale-blue *Lathyrus*, which must either be grown in a cool house, or on a trellis or a wall in warm localities. All of these can be raised from seeds, or propagated by division, but the named or white varieties of *L. latifolius* cannot be relied upon to come true from seed. One generally associates these in one's mind with the *Calystegias* and *Convolvulus*. Among the former there are two very ornamental plants, *Calystegia dahurica*, with large pink flowers, and *C. pubescens* fl. pl., with pretty pink or whitish flowers. Like the *Convolvulus*, the *Calystegia* is a twining plant. Of the *Convolvuluses*, there may be named *althæoides*, a low twiner, with rosy-purple blooms and silvery leaves; *Scammonia*, a handsome cream-coloured one; and *tenuissimus*, a pink, low twiner. Pretty as are the flowers of our common *Convolvulus* of the hedgerows, it ought not to be allowed to enter the garden on account of its encroaching habit of undergrowth. A twining plant not often seen is *Cynananchum acutum*, which has pink or white flowers. Of somewhat similar growth is the greenish-white *Berchemia volubilis*, which is, however, of shrubby habit. The *Actinidias* are also ornamental climbers not much cultivated, and the best among them

are *Kolomikta* and *volubilis*. Both have white flowers; and the greatest attraction of the former lies to some in the ornamental autumnal tints of the leaves. These may be raised from seeds, cuttings, or layers. *Decumaria barbarea* is another little grown twiner, which does well against a sunny wall in a border of dry soil. It has a number of sweet-scented white flowers, and is propagated by cuttings under a glass in summer. Nor is *Celastrus scandens*, the climbing Staff Tree, much grown with its racemes of small pale-yellow blooms, followed by orange-coloured berries. It grows best from layers. *Hablitzia tamnoides* is principally grown for its leaves, the flowers being green and small. It is herbaceous, and is increased by division.

The common Hop, *Humulus Lupulus*, may be used as a herbaceous climber in rough places, and is very ornamental indeed, soon covering a large space, and looking pretty with its leaves and flowers. It has, however, a great drawback for many places, as it is difficult to keep from spreading too quickly at the root, especially if it is planted near other plants which ought not to be disturbed to keep it within bounds. Nor is it choice enough when there are so many better things which could be grown instead. Those who wish a yellow-leaved plant will find it in the variety *H. L. aureus*. *Ipomœa pandurata* is a pretty twiner for a choice place where it can be kept in bounds. It is seldom seen, and has white *Convolvulus*-like flowers with a purplish throat. Two interesting perennial cucurbitaceous plants are furnished in *Cucumis perennis*, or, as it is also called, *Cucurbita perennis*, which has roundish fruit, and *Megarrhiza*, or *Echinocystis californica*, which has small roundish fruit, like that of a Sweet Chestnut, covered thickly with small spines. These are best propagated by seeds sown under glass in spring. *Menispermum candadense*, the Moon Seed,

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is an ornamental plant, which has the merit of doing well on a rather damp and shady wall, a position for which few climbers of this kind are suitable. The greenish-yellow flowers are less attractive than the cordate leaves, and the moon-shaped seed pods. It can be propagated by cuttings or by division of the root in spring.

Two very ornamental climbers are left of those deserving notice here. One is the *Mutisia, decurrens*, a rare and strikingly beautiful twining perennial, with large orange-coloured flowers, and rather lanceolate leaves, terminated by a tendril, being the better of those now referred to. It likes a soil of peat and sand and a shady position, but is somewhat difficult to establish, and those in wet districts will find it an advantage to try a little limestone among the soil. It is safer to secure a plant in a pot, from which it can be turned out with the roots in the ball of soil. Another *Mutisia*, named *M. Clematis*, is hardy on a wall in the south only.

The other is one of the most charming and admired of all herbaceous climbers. This is *Tropæolum speciosum*, the Flame Nasturtium, which attracts so much attention from tourists in Scotland, and is in autumn so charming with its bright scarlet flowers and its pretty green foliage. Although it likes a shady position, and a cool, moist, peaty soil, these are not absolutely essential, though it is not likely to thrive well on a dry sunny wall in an arid locality. April is the most suitable time to plant it, and the roots should be firmly trampled into the soil, which may also have a proportion of gravel among it. Plants in pots can also be purchased at a moderate price, and these have a better chance of success than the others. After planting, copious and frequent supplies of water are necessary, and the cultivator need not be disappointed

if the *Tropæolum* makes little growth the first season. If it appear the second year, and is well attended to in the way of water supply, it will grow more vigorously, although one can hardly be sure of having established it until it has reached a height of six or seven feet in the second season. It must also have twine or rough twigs to cling to. *T. tuberosum* is only half-hardy and the tubers ought to be treated like potatoes, planted out in April, and lifted when the foliage becomes yellow, and stored in a frost-proof place in winter.

CHAPTER V

HARDY EVERGREEN CLIMBERS

importance — Uses—Ivy — Jasminum — Berberidopsis — Passifloras —
Climanthus—Ercilla or Bridgesia—Smilax—Bignonia—Tecomas —
Araujias — Cocculus — Holbœllia — Stauntonia — Lardizabala —
Mitraria—Vitis striata—Billardiera.

As may be expected in our climate, the number of hardy climbing plants with evergreen foliage is comparatively limited, but their importance is relatively large, as they are of immense utility in covering bare walls and unsightly objects in winter, when the deciduous plants are leafless and bare. It is only necessary to think of the beauty of a common Ivy in its evergreen garb in the leafless season for other plants to recognise its value. The few evergreen climbers we have may, of course, be supplemented by the evergreen wall shrubs mentioned in another chapter, but like evergreens in the shrubbery, they must be used with judgment, and not planted indiscriminately to the exclusion of the beautiful deciduous climbers. The fresh young leaves of the deciduous climbing plants are delightful in spring, and frequently die off with the most vivid colouring when autumn comes. These evergreen plants ought thus to be planted with due consideration, but it is possible to make them add to the charms of the deciduous ones by using them as a background to these. Thus, a dark-leaved Ivy may form the ground-work for a bright Jasmine or a slender *Eccremocarpus*, or for many others of slender habit, whose flowers and

leaves are only seen to full advantage when in front of some dark-leaved evergreen plant.

It is well to remark that some of those here named may lose their leaves in winter, especially if exposed to cold draughts, and that some of those in the list of deciduous and herbaceous climbers retain them in very mild places.

The best and most useful of all our hardy evergreen climbers is undoubtedly the Ivy, as it is universally called by the British people, the botanical name of *Hedera* being little used in gardens. The principal species, *Hedera Helix*, gives us many varieties and, though greatly used, might well be still more widely cultivated for the sake of its many beautiful forms, a number of which are but little known. Objection is taken to the growth of Ivy on the walls of dwellings by some on the alleged ground that it renders them damp and that the shoots enter any crevices and destroy the walls. The former is a fallacy, and Ivy has the opposite effect, not only throwing off the rain, but drawing the moisture out by its aerial rootlets which cling to the wall. Nor is there any danger of it entering the joints of the wall if this has been properly built and pointed, as all walls should be. In planting Ivy it is often necessary to fasten it to the wall at first, until it can attach itself to it. Cemented walls it dislikes, and it is with some difficulty that it can attach itself to them in the ordinary way. The annual clipping of Ivy to keep it neat and tidy should never be neglected where a trim appearance is desired. The best time for this operation is the month of March, just before the young leaves begin to make their growth. The clipping ought to be thoroughly performed and the Ivy clipped in close to the wall. It may look rather bare for a short time, but in a month or two its appearance will convince all who see it of the beneficial effect of the operation. At the same time it should be trimmed off below the eaves, as it

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ought not by any means be allowed to climb on to the roof, which it would soon destroy by inserting its growths between the slates or tiles. As a wall plant it is very ornamental, but its uses are even wider, as it can be grown over trellises out of doors or in the house, over tree stumps, and also on rockeries, for the latter purpose the little *Hedera H. minima* being one of the most suitable for covering large stones or small rocks. It may be well to remind those who grow it on living trees that it ought not to be allowed to grow far up the trunk, but kept to within six or eight feet of the base.

There are too many Ivies to name in detail, and only a selection can be referred to, seeing that there are upwards of a hundred named varieties. One of the most popular of these, because of its rapid growth, is *H. H. canariensis*, the Irish Ivy, which has very large leaves, though its somewhat loose habit makes it less useful where neatness is desired. There is a pretty variegated form of considerable beauty. A popular large-leaved variety is *dentata*, which has fine, heart-shaped leaves and which grows freely. Another of much the same character but, if anything, to be preferred, is *amurensis*. *Rægneriana* is another which is a good deal grown for its fine, thick, heart-shaped leaves. A pretty yellowish-green Ivy is *H. H. algeriensis*, and it also has a pleasing, variegated variety occasionally called *canescens*. *H. H. aurantia* has greyish-green leaves prettily veined, and *cuspidata* is another good one with grey-green leaves. A distinct variety with rather deeply-lobed, digitate leaves is *H. H. digitata*, and *lobata major* is another with deeply-cut lobes. *Marmorata*, which has a creamy white margin, is also pleasing; while *sagittæfolia*, deep green, *rhombea*, green margined white, and *variegata* margined with silver, are all very attractive. The Ivy is readily propagated by cuttings in spring or autumn or by layers.

A garden is hardly complete without one or two of the Jasmines; and while the common white Jasmine, *Jasminum officinale*, is deciduous, it is a general favourite with its sweet-scented flowers. There may also be grown the yellow-flowered *J. revolutum*, which reminds one of a summer-blooming *J. nudiflorum*, but with the flowers associated with the leaves. It may be cultivated in a sunny position, against a wall or a trellis, and is propagated by cuttings of ripe wood inserted in a shady border under a handlight or bell-glass. *J. revolutum* flowers from June until autumn. *J. fruticans* is like the latter.

One of the most attractive of our climbing plants is *Berberidopsis corallina*, which has a doubtful character for hardiness, but which is hardier than many suppose if it is given a warm wall free from exposure to cold draughts of wind. It has very ornamental, glossy leaves, and charming, pendant, scarlet flowers. This Chilean plant is propagated by layering the branches in autumn, or by sowing seeds in a slight heat in spring. Although not evergreen or hardy everywhere, *Passiflora cærulea* is so in many places, and is one of the most delightful of our summer-flowering climbers. Its short-lived flowers are very pretty, and even prettier are those of the white variety called Constance Elliott, whose blooms have a stronger scent than those of the typical form. The Passion Flowers should have a sunny wall and are propagated by cuttings of the young shoots, struck in bottom heat. They may also be grown from the seeds produced in the attractive yellow fruit, which they should ripen freely in a favourable position. Care should be taken in training the Passion Flowers to fasten in or cut out the shoots which can be dispensed with; after the bloom is over they can be cut back and thinned out.

One of the most striking of climbers is *Clianthus*

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puniceus, the Parrot's Beak or Glory Vine, but, unfortunately, it is only hardy in some places, though more frequent trials would probably prove it to be satisfactory in districts where it is now considered tender. It is a very ornamental plant when in bloom, and the slight protection it requires is well repaid by the effect it produces with its curious, brightly coloured, scarlet blooms. It can be grown from seeds sown under glass in spring or by cuttings in sand in bottom heat under glass. Rather rough loam with some leaf-soil is the most suitable compost. Pruning in spring by cutting back the leading and lateral shoots is the most suitable. The fine variety of *C. puniceus* named *magnificus* is cultivated in a similar manner. *Ercilla*, or *Bridgesia*, *spicata* or *volubi* is another attractive wall plant, which clings to a building as closely as Ivy, and which has thick leaves and racemes of purplish flowers. This *Ercilla* is quite hardy, but is comparatively little cultivated. It will grow in common soil, and may be propagated by layers or cuttings.

The *Smilaxes* occasionally grown in our country are principally *S. aspera* and *S. rotundifolia*, which are slender evergreen climbers, which will stand our winters in most localities unless exposed to strong currents of wind. The flowers are of no importance, but the leaves are fresh and attractive looking. The variety of *S. aspera* named *mauritanica* is more tender than the typical species. They like a rather light soil, and are propagated by division.

Bignonia capreolata, a very ornamental climber, is hardy in warm localities only, but is well worthy of a trial in many sheltered places for covering a wall or training up a tree. It has handsome orange-coloured flowers in racemes, likes a compost of loam and peat, and requires thinning-out some of the shoots so as to ripen those which are left. It is propagated by cuttings

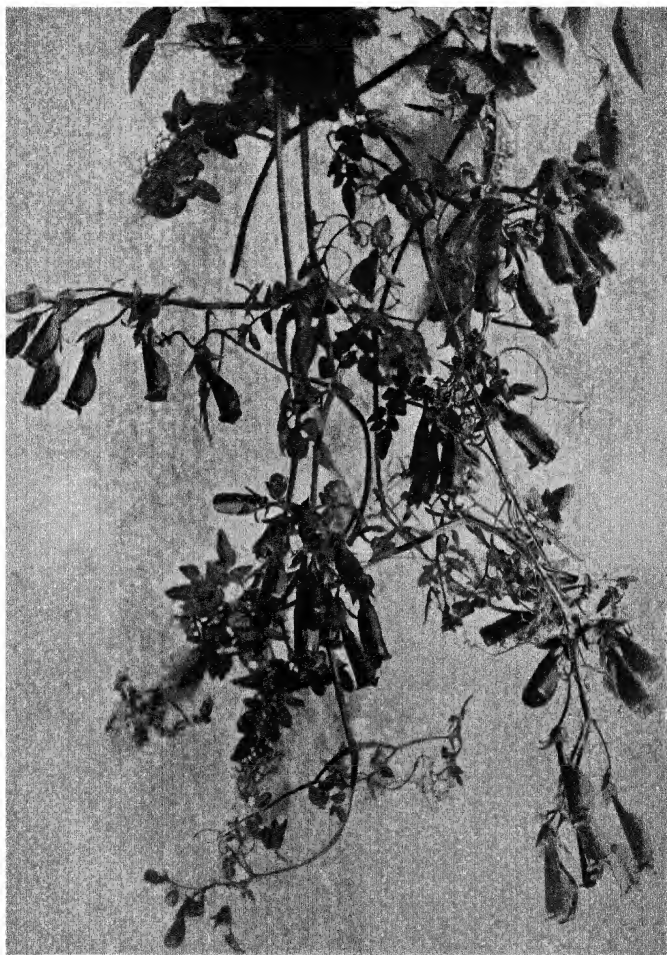
of shoots with three joints, struck in bottom heat in spring. In the south the allied *Tecomas*, *australis* and *capensis*, may be grown against a wall, but are almost useless in the north except under glass. The first has flowers of a yellowish-white tinged with purple inside, and the second orange-scarlet blossoms. They are propagated in the same way as the *Bignonia* and require the same treatment.

There are several very desirable climbers in this class which generally require protection in winter, but which ought to be tried in all mild gardens. *Araujia* or *Schubertia grandiflora* is a pretty climber succeeding in sheltered situations and having clusters of pretty, sweet-scented flowers. It is propagated by seeds sown in spring or by cuttings of half-ripe shoots inserted in sandy soil in bottom heat, and likes a light soil with a little peat. *A. sericifera*, often known as *Physianthus albens*, is a little hardier. *Cocculus carolinus* and *C. laurifolius* are two climbing plants which require a little protection also, but are hardly worth a good place with their greenish flowers. They are of twining habit, are propagated in the same way as the *Araujia*, and prefer a similar soil. *Holboellia latifolia*, which has sweet-scented purple or greenish flowers, also needs some winter protection except in warm places. It is propagated in an identical way and grows in a light, rather dry soil. *Stauntonia hexaphylla*, an allied plant with fragrant white flowers in April, is hardier than the *Holboellia*, and is propagated in the same manner; the requisite pruning is performed in autumn by cutting back the long shoots and leaving only those desired to flower the following spring.

Lardizabala biternata, with drooping racemes of purple flowers, is attractive in the south only in the open, requiring a greenhouse in the north. It should have the same propagating treatment as the preceding plant,

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and likes loam, sand and peat. *Mitraria coccinea* has handsome scarlet flowers and appears to be hardier than is generally supposed, even in the north near the sea. It flowers from May onward, likes a peaty and sandy soil, and is propagated by division in spring, or by cuttings any time before autumn, struck under a glass. It thrives better near the sea than elsewhere. *Eccremocarpus scaber*, which is referred to among the annual climbers, is really a perennial, and in very mild localities remains evergreen. *Vitis striata*, frequently called *Ampelopsis sempervirens*, is a pleasing evergreen climbing plant, reputedly hardy, but the writer's experience with it is that a hardy winter may prove fatal. It is propagated by cuttings under a hand-light or bell-glass and grows in any common soil. *Billardiera longifolia* is also a little tender, but is rather pretty with its greenish flowers, followed by blue berries. It may be propagated by seeds or cuttings.



ECCREMOCARPUS SCABER
(Photo by I. L. Richmond)

CHAPTER VI

HARDY WALL SHRUBS

Ceanothuses — Forsythias — Escallonias — Magnolias — Kerrias —
Corokias—Elæagnuses — Cytisuses — Fabiana—Colletia—Abelias
—Asimina—Azara—Berberises—Drimys—Buddleia —Cardiandra
—Carpenteria—Caryopteris—Chimonanthus—Choisya—Cistuses
—Clerodendrons—Cornuses—Corylopsis.

THERE are many shrubs which are either so decorative or come to greater perfection on walls or treated as climbers against trellises and on the pillars of pergolas, that they must have a due amount of attention here. For low walls one of the most attractive genera is the Ceanothus, which gives us a great many species, varieties and hybrids. Among these there is hardly one which will not repay the little care it requires, and which will not by its beauty make the cultivator congratulate himself upon giving it the needed space. The greater number of the forms have blue or bluish flowers, but there are some with white blooms. It is when we come among some of the hybrids or varieties which approach red in their colouring that we seem to enter the least hardy section, but we may take it that the varieties of azureus are hardy in most places, while americanus, the New Jersey Tea, is even hardier, with its bluish or white flowers. They all like a rather light soil, though not fastidious in this respect, and good drainage. They are propagated by layers or by autumn-struck cuttings in a frame in light soil. They require to be neatly fastened to a wall, and

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may be thinned out when they become too crowded. There are so many varieties that it is impossible to name more than a few, but the list in the tables at the end will supply the names of a good selection. One, however, which ought not to be omitted, though it is not one of the newest, is *Gloire de Versailles*, a variety of *C. azureus*, which has charming pale blue flowers in dense thyrses. The French raisers, such as M. Lemoine, have given us quite an embarrassing choice, but among these we may select for mention the double-flowered hybrid, *flore albo pleno*, and the rosy-violet *Palmyre*. *C. dentatus* may also be named as a good hardy species with small clusters of blue flowers.

As wall shrubs the *Forsythias*, which are deciduous, and flower before the appearance of the leaves, are exceedingly ornamental. They should have a rather sheltered place, because of their early blooming, although perfectly hardy. They grow in common soil, and when on a wall should be trained so that the main branches are fastened to it. The other shoots can then be spurred back, or if preferred, and the more elegant way, allowed to grow a good length, when they will make a fine effect with their long sprays of golden bells. "Golden Bell" is the appropriate popular name for the *Forsythia*. *Viridissima* and *suspensa* are the two most commonly cultivated, but I prefer *intermedia*, a hybrid form. They make fine trellis plants also, and look remarkably attractive with a dark background, such as Ivy.

The *Escallonias* are also fine wall shrubs, although one of the finest, *macrantha*, is too tender for many inland gardens and thrives best near the sea. Its fine crimson flowers are very attractive along with the glossy evergreen foliage, which it shares with the others of the genus. *Philippiana* seems to be considerably hardier, and its white flowers are appreciated.

Others will be found in the table of plants at the end. All are desirable, and require a light soil, and are propagated by layers, suckers, or by cuttings, struck under glass. They should be thinned out and kept trimmed to prevent them from growing rough.

The wall is the proper place in colder districts for the greater number of the gloriously beautiful Magnolias, especially of the evergreen species, which want its protection from wintry winds. Of course *grandiflora*, with its several varieties, grows to a great size, and thus needs plenty of room, but it is so fine as a wall-plant that those who have space and cannot grow it in the open may well give it a station on a tall building. The dwarfer *glauca*, also with white flowers, requires a smaller space, as its full height is about fifteen or sixteen feet. All the deciduous species such as *conspicua*, the Yulan, can be trained to a wall also, and this is a desirable plan for places where cold winds often prevail in spring. *M. conspicua soulangiana* is a pretty form of that well-known species, with purple-tinted blooms. The Magnolias like a good soil, but must have ample drainage. A favourite old wall plant is the deciduous *Kerria japonica*, whose double variety is one of the easiest of deciduous wall shrubs to grow, and which will give its double yellow flowers as freely in a shady wall as on a sunny one. If neatly trained it requires little attention, and will thrive in ordinary soil. It is propagated by layers, cuttings, or division. This yellow-flowered shrub reminds us by its colour of two antipodean plants, *Corokia buddleoides* and *C. Cotoneaster*, though the flowers of the former are in panicles, and both are evergreen in their habit. They are a little tender, and are increased by layers or by cuttings in a frame in autumn. The first is taller than the second, which is a low shrub, the other growing to ten feet or more in height. A class of

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shrubs but little grown on walls, but which look remarkably handsome in such a position with their fine evergreen or deciduous leaves, are the *Elæagnuses*, the *Oleasters* or *Wild Olives*. *Argentea*, *glabra*, with its variegated forms, *longipes*, and *pungens*, with its varieties, are all pretty on a wall, their beauty being usually heightened by their coloured fruits. They are raised from seeds, or propagated by cuttings or layers, and like a dryish, warm soil. The *Cytisuses*, or *Brooms*, give us some pretty shrubs which may be trained to a wall if desired, though in the opinion of the writer they are most charming in a bush form. *Præcox*, *albus*, and *Scoparius andreanus*, are among the best for this purpose. They should be so fastened to the wall that their long thin branches will hang out gracefully from it, and ought to be well cut in immediately after flowering is over.

Fabiana imbricata is a very ornamental Heath-like shrub of moderate height (about four feet) and suitable for a low wall, though it has little chance of surviving except in favoured places unless it has such shelter. At least as far north as Edinburgh it may thus be cultivated with a mat before it in hard frosts. It is quite a charming thing with its white flowers, and thrives best in a peaty soil, being propagated by cuttings under a glass in summer. A singular-looking wall-plant named *Colletia spinosa* is little seen, although its curious and dangerous-looking awl-shaped spines make it interesting to all who see the plant. It and its allied species, *C. cruciata*, which is scarcely so hardy, can be cultivated in loamy soil and propagated by cuttings. For low walls there may be used the pretty *Abelias chinensis* and *triflora*, though the latter may require some shelter in winter. The former, which is deciduous, is often known in gardens as *A. rupestris*, and has pink flowers; while *triflora*, which is evergreen, has

pale yellow, pink-tinted flowers. They like a proportion of peat, and are propagated by layers, and also by cuttings under a glass. *Asimina triloba* is another shrub suitable for training on a wall, and grows to about ten feet high. It is generally deciduous and has purplish flowers, with some yellow towards the centre of the blossoms. It is best propagated by layers, and ought to have some peat or leaf-soil added to the loam. *Azara microphylla* is a remarkably neat wall shrub, with small evergreen leaves and greenish flowers of no importance, succeeded by pretty little orange berries. It is one of the prettiest small-leaved evergreens we have. *Integrifolia*, *Gilliesii*, and *dentata* may prove equally hardy, but have not been so well tested.

Among the *Berberises*, or Barberries, there are a number of species which are ornamental on low or medium-sized walls, though so many of them do well as bushes that there is less need to make use of them in this way. *B. nepalensis*, or *Mahonia nepalensis*, is very suitable, particularly because it really requires such shelter in the north. The others need hardly be named here, and this, like the rest of the *Berberises*, is propagated by suckers, layers, cuttings, or seeds. *B. nepalensis* has yellow flowers, and large, handsome leaves. With a little shelter, even pretty far north, the pretty *Drimys Winteri*, which is evergreen, and has milky-white blossoms, may be grown against a wall, and will cover a considerable space, but should be kept well cut back to induce flowering, and is apt to become a little untidy in its growth if neglected for a time. Its sweet flowers are about an inch in diameter. It prefers some peat and sand, and is grown from cuttings of the half-ripe shoots in a cold frame, kept close for a time. The pretty *Buddleia globosa*, the Orange Ball, is a shrub which is always admired with its balls of orange flowers. It is usually grown on

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walls, though it is more ornamental as a bush where the climate is mild enough for this, as it blooms less freely if cut in than when allowed some room to extend its growth. In some places, too, it is even hardier as a bush than on a wall exposed to the morning sun. It is propagated by cuttings in sandy soil, rooted in a cold frame from which frost is kept from the time they are put in in autumn until spring. The cuttings ought to be of ripe wood. *Lindleyana*, which has reddish flowers in spikes, appears to be as hardy, though not usually so considered. Those who have warm gardens in the south may try on a low wall the evergreen Japanese shrub *Cardiandra alternifolia*, with white and lilac flowers. It is a low-grower, and is propagated by cuttings.

The exquisite *Carpenteria californica* is a shrub which is only slowly making its way into our gardens, owing to the doubt felt as to its hardiness. It is much hardier than is generally supposed if taken care of until it is of a fair size, but should have a sheltered wall and light, sandy soil. It has ornamental leaves and beautiful white flowers. The best method of propagation is by layering. For covering the base of a wall in places where it does not flower well in the open, the pretty *Caryopteris Mastacanthus*, the Moustache Bush, may be cultivated for the sake of its violet flowers. There is also a white variety, *albus*. This shrub is increased by seeds, cuttings or division. It is deciduous.

For its winter-blooming and for the fragrance of its aromatic-scented flowers, *Chimonanthus fragrans*, the Winter-Sweet, is to be desired by those who can give it a south or south-west wall. The flowers are yellowish-white, purplish inside, and appear in December or January. The form called *grandiflorus* is the better of the two in cultivation. They require to be well cut

back after blooming as the flowers come on the wood of the previous year. Though it can be propagated from seeds or cuttings, layering is the best method of increase.

Choisya ternata is one of the most beautiful of all white-flowered evergreen shrubs, and though the writer prefers it in bush form, he is forced to confess that it must be grown on a wall to induce it to grow properly in all colder gardens and districts. It has ornamental evergreen leaves and charming white, fragrant flowers. It prefers a soil in which there is a liberal admixture of peat and sand, a sunny exposure, and little pruning, except to keep it in bounds. It can be increased by ripened cuttings, struck in light soil under glass in summer or spring.

The *Cistuses*, or Rock Roses, are among the most charming of our summer-flowering shrubs, though their value is diminished by the fugaciousness of the blooms of the greater number of the species and the tenderness of many. They are frequently destroyed by late frosts, just at the time when we have begun to congratulate ourselves that summer is near and that all danger is over. It is thus desirable to keep young plants, which are easily raised from cuttings or seeds, in a frame as a reserve in case of such losses. There is much confusion in the nomenclature, and one must thus adopt the usual garden names in this case, as authorities differ greatly.

Almost any may be cultivated on south or west walls, but I shall only name a few of the taller species, which are more suitable for covering a little larger space than the others. *Ladaniferus*, the Gum Cistus, is a fine species with white flowers, and the variety *maculatus* has a dark blood-red spot at the base of its white petals. *Latifolius* and *laurifolius* have a yellowish spot at the base of each of their white petals. The latter is one of the hardiest, and the writer has a large plant only sheltered from the north by a hedge, but other-

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wise in the open, which is upwards of six feet high in a bush form. *Monspeliensis*, its variety *florentinus*, and *oblongifolius*, have white flowers. *Villosus* is one of the tallest of the purple-flowered species. There are several others, but those named are among the most suitable for our purpose. If covered with a mat in winter, as may be necessary sometimes, it should be removed on mild days. *Clerodendron foetidum* and *C. trichotomum* are pretty shrubs, hardy enough in the open in warm places, but flowering better if trained to a wall. The first has corymbs of lilac-rose blossoms, and the second loose cymes of red and white flowers. They need to be cut rather hard back after flowering. Propagation is effected by cuttings taken after flowering at the same time, by means of cuttings of the side shoots three inches or more in length, struck in bottom heat under glass. It seems scarcely necessary to do more than suggest some of the *Cornuses* or *Dogwoods* for wall-shrubs, as they generally do so well in the open. The value, however, of the shrubs known in gardens as *Benthamia fragifera* and *B. japonica* but respectively called by botanists *Cornus capitata* and *C. Kousa*, may be pointed out. These Strawberry Trees are ornamental on a wall, which they generally require in gardens, the first having heads of large white flowers, followed by reddish fruit. The second has beautiful yellowish-red blooms. They are best propagated by layering or by seeds. The *Corylopsis* makes a pretty early-flowering shrub, with its drooping racemes of pale, or greenish, yellow flowers, which are delicately scented. The branches are leafless at the flowering season, however. The best species are probably *spicata* and *pauciflora*, which resemble each other a good deal. They are propagated by layers or cuttings.

CHAPTER VII

HARDY WALL SHRUBS (*continued*)

Cotoneaster — Embothrium — Eucryphias — Euonymus — Fuchsias —
Fremontia — Garrya — Gordonia — Indigofera — Lespedeza — Lippia
— Myrtles — Olearias — Philadelphuses — Plagianthus — Ozothamnus
— Prunuses — Punica — Cydonia or Pyrus — Raphiolepis — Ribes
— Rosemary — Solanums — Stuartias — Vitex — Viburnums — Vinea
— Aristotelia — Desfontainea — Enkianthus — Phillyrea — Photinia.

THE old Cotoneaster microphylla, one of the best of the genus for a wall, is valuable on account of its evergreen foliage, white flowers and scarlet berries. Its adaptability to training and trimming, and its rapid growth constitute it a valuable plant of its kind. Simonsii should not be forgotten, and acuminata, frigida and nummularia may also be named, the three last named being only sub-evergreen.

Southern gardeners are favoured in being able to grow in the open the glorious Embothrium coccineum, with its long, scarlet, drooping flowers and its large, entire, evergreen leaves. It is best suited for a low wall, and is propagated by cuttings of young shoots or half-ripe wood in peat and sand under a glass in bottom heat. The Embothrium likes peat and sand in the soil in which it is grown. Two of the Eucryphias, which are beautiful Rosaceous shrubs, are fairly hardy on walls, and like a south wall and a border of loam with some peat and sand. That best known is pinnatifida, with large white flowers, and evergreen pinnate leaves. The other is cordifolia, also with white blooms, but with

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rather oblong leaves, which are also retained during winter. They are propagated by layers or by cuttings of young wood under a glass in sand. They will both cover a good space in course of time.

The *Euonymus* is a good wall shrub, and its fresh foliage is appreciated on many walls, though the best species for the purpose, *E. japonicus*, is only half-hardy in some parts in the north. By the sea, however, it is hardy, though it is seldom seen reaching its maximum height of about twenty feet. This is an evergreen shrub, whose numerous variegated forms are held in more esteem than the typical form. The flowers are white and small. Of the variegated forms of *japonicus*, *aureo-marginatis*, with a yellow edge to the leaf, *albo-marginatis*, which has a white margin, *latifolius aureus*, with broad leaves, and *Golden Gem* are among the best; but as they sometimes show green-leaved branches, these should be kept in check or they may overpower the others. This *Euonymus* is easily propagated by cuttings under a hand-light or glass. It does well on a shady wall.

In mild neighbourhoods and by the sea some of the hardier *Fuchsias* may be cultivated on walls, though they are so often cut down to the ground in severe winters that their usefulness for this purpose is greatly reduced, except in the south of England or Ireland or by the sea. They are easily increased by cuttings, and among the best for this purpose are the old *Riccartoni*, *elegans*, *coccinea*, and the newer hybrids of the type of *Telegraphe*.

Fremontia californica is one of the most beautiful of our yellow-flowered wall shrubs, and is delightful when in flower, with its two-inch flowers and ornamental leaves. It likes a good soil, but is not so particular as to aspect as some shrubs, and may be given a north or north-west wall. In April and May it is very pleasing

indeed. It is suitable for covering a space of from six to ten feet in height. The *Fremontia* is propagated by seeds sown in spring under glass, or by cuttings under glass at the same time. The *Garrya* is best appreciated because of its pretty, catkin-like, drooping racemes of flowers in early spring. These are greenish or yellowish and the plants are unisexual, *i.e.* the male and female flowers are on separate plants. *G. elliptica* is the one most readily procurable and the best known in gardens. It is propagated by cuttings, layers, or by seeds, the first being struck in a shady place under glass in early autumn. *G. elliptica* is hardier than is generally supposed and does well as a bush in some localities. Prune as soon as the flowering is over, removing the exhausted growths and shortening long breast-wood.

In *Gordonia Lasianthus* and *Indigofera gerardiana* we have two hardy shrubs of different characters which are but little met with in private gardens. The former has large white flowers, about four inches across in late summer and early autumn, and oblong, rather leathery leaves. It likes a moist, peaty soil, and is propagated by layers. The *Indigofera* is one of the hardiest of the Indigos, and has racemes of a considerable number of pale red flowers, of the Pea shape characteristic of the Leguminosæ. It flowers in summer, and is rather a low grower. It flowers best on well-ripened wood, and the growths should be cut back in autumn. Propagation is performed by sowing seeds, or by striking cuttings of half-ripe shoots under a glass in gentle bottom heat. A rather peaty soil is preferred. On a wall, *Lespedeza bicolor*, often cultivated as *Desmodium penduliflorum*, looks well with its panicles of drooping rosy-purple flowers. It is a good plant for a low wall or trellis, and may be grown from seeds or by means of cuttings in spring or summer under a glass. It prefers a peaty soil.

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Lippia citriodora, known as *Aloysia citriodora* or *Verbena triphylla* to many gardeners, is hardy only on a wall, and even thus protected is too tender for cold places. Its popular name of the Sweet Verbena gives an idea both of the character of its whitish flowers and of the fragrance of the plant, best observed when the leaves are bruised. In the favoured south-west of England and in some other congenial districts some of the Myrtles may be cultivated against a wall, where their beauty and sweetness are appreciated. *Myrtus communis*, the common Myrtle, is charming in such places with its white flowers. There are a good many varieties in cultivation, all being propagated by cuttings of partially ripe wood under a glass. *M. Ugni*, perhaps better known as *Eugenia Ugni*, is also a pretty shrub, with white flowers succeeded by pleasing, pleasantly flavoured red or black berries. It is hardy in similar positions and places as suits *M. communis*. Upon the whole, the wall is the best place for the charming *Olearias* in many places. The prettiest of those which need such protection is *O. stellulata*, covered with a profusion of white, Daisy-like blooms. It has greyish foliage. *O. Haastii* is hardier and is a handsome species, which looks well against a wall or in the open. The *olearias* like a rather light soil, and are easily propagated by cuttings in spring or summer, taken with a heel.

For growing against a wall some of the *Philadelphuses*, the Mock Oranges or *Syringas*, are very effective with their pretty flowers. A list of the taller-growing species appears in the tables, but it may be said that *P. grandiflorus* is one of the most suitable. These flower on the wood of the previous year, so that this should be well cut away after blooming and the young shoots laid in. They are propagated by layers, suckers, or by cuttings of the young growths under a glass. The

Plagianthus is not one of the most desirable wall shrubs where free-blooming is a recommendation, though its leaves are ornamental. The species are all a little tender, but *P. betulinus* is hardy on a sunny wall as far north as Edinburgh. It is one of the best of this genus, which have all white flowers, generally small. They can be raised from imported seeds.

One of the most elegant of all wall shrubs though, unfortunately, too tender for most northern gardens, is *Ozothamnus rosmarinifolius*, a beautiful thing on the wall, while the flowers if cut on the long branches are very beautiful as winter decorations in the house. This is owing to their "everlasting" character, for the shrub belongs really, according to some, to the *Helichrysums*. They are white, and the small leaves are very pleasing. It should have a sunny wall, loamy soil, and is increased by cuttings of the half-ripened shoots in summer.

Among the *Prunuses*, which include botanically the Almonds, Peaches, Plums, Cherries, and a few other plants, there is a wealth of choice, although, of course, many are even more suitable for the open than for the wall. It must be remarked that *P. triloba*, the lovely, semi-double pink-flowered species, ought always to be cultivated on a wall when in the open, because of the protection thus afforded to it. This may also be said of *P. davidiana* and its pinkish form, one of the most precious of the early flowering shrubs we have. Even the common fruiting Peaches are so delightful when in bloom that a sunny wall covered by them looks charming indeed. For ornamental purposes, however, a less formal method of training than that adopted for the sake of the fruit is to be preferred, and this is accomplished by only training the principal branches to the wall and permitting the others to extend from it. After the flower is over these may be cut back to a couple of eyes of the leading branches on the wall.

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The Pomegranate is so well known by repute that it is surprising to meet so seldom with the plant which yields the fruit known by that name. This is *Punica Granatum*, a pretty, hardy tree of deciduous habit, of which there are a number of varieties with flowers varying from red to white, and one or two double varieties. It seldom fruits with us, and to induce it to bloom it should have a warm wall. It requires a good loam, and is increased by seeds, layers, grafting the varieties on the common form, and suckers.

Favourite plants for walls and trellises are always the Japanese Quinces, *Pyrus*, or *Cydonia japonica*, the old deep scarlet form being oftener met with than the many other pretty varieties, of which some of the best are named in the table of Wall Shrubs. They grow in any common soil, and are propagated by layers, suckers, grafting, or cuttings. *Pyrus Maulei* and its variety *superba*, are only suitable for low walls or trellises, and, with several of the other *Pyruses*, are very ornamental on these.

The Indian Hawthorns, *Raphiolepis*, are well represented by the Japanese species, *japonica integerrima*, which should have a little protection in winter. It is evergreen and has fragrant white flowers.

Not many of our *Ribes* or flowering Currants are worthy of the limited amount of wall space generally at command, but one, at least, is precious enough for this consideration. This is *R. speciosus*, which has beautiful Fuchsia-like scarlet flowers.

The Rosemary, *Rosmarinus officinalis*, and its variegated variety, *variegatus*, are worth growing on a low, sunny wall on dry soil, for their beauty as well as for their fragrance and the many traditions which cluster round the shrub.

The *Solanums* give us a few handsome wall shrubs of the highest worth. *S. crispum*, which has beautiful

blue flowers, is the prettiest of these, and a large plant in full bloom is worth going a long way to see. There is a variety called *angustifolium*, which differs slightly. These are fairly hardy. *S. jasminoides*, with white flowers, makes a good companion, but is more tender. They grow in common soil, and are propagated by cuttings struck under a glass. In favoured gardens the *Stuartias* are cultivated with success on warm walls, where the wood can be properly ripened. They prefer a little peat in the soil, and are increased by layering, and also by cuttings of ripe wood under a glass in sandy soil.

S. pentagyna, creamy-white, and *S. virginica*, white, are the most generally grown, but *S. pseudo-Camellia*, or *Grandiflora*, is also to be valued for its creamy-white flowers. *Vitex Agnus-castus*, the Chaste Tree, or Monk's Pepper, which has pale lilac flowers, should have a wall except in the south, and is referred to for the sake of some who might wish to grow this old plant in the open. The *Viburnums* of tall habit make very ornamental wall shrubs and can be cultivated in practically any good soil. They are propagated by cuttings of the partially ripened growths in shade under a hand-light or by layers. The pretty blue-flowered *Vinca major*, a tall Periwinkle, looks well on a low trellis, fence, or wall.

Aristotelia Macqui is a neat shrub of moderate height which has green flowers, followed by black berries. The variegated form is a neat shrub and their evergreen habit is an advantage for some positions. *A. Macqui* is propagated by layers or cuttings and does well in any common soil. *Desfontainea spinosa* is prized for its evergreen leaves and its tubular scarlet and yellow flowers. It prefers some peat in the soil and is raised from cuttings in heat under a glass. Of the *Enkianthus*, which are neat wall shrubs, *campanulatus* and

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japonicus are fairly hardy on walls. Loam and peat make a good compost for them and they are propagated by cuttings in spring—half-ripened wood being used. The *Phillyreas* and *Photinia* are ornamental evergreens, which are rather tender and like a rather light loam. Both are increased by cuttings or by grafting; the former on the Privet, and the other on the common Quince.



PASSION FLOWER
(Photo by Henry Irving)

CHAPTER VIII

CLIMBERS UNDER GLASS

Cultural Hints—Abutilons—Allamandas—Bignonias—Bougainvilleas—
Clerodendrons — Lapagerias—Ipomœas — Batatus — Convolvulus —
Passifloras — Tacsonias — Thunbergias — Stephanotis — Tecomas —
Aganosmas — Akebia — Bomareas — Alstrœmeria—Aristolochias—
Amphilophiums — Antigonons — Gloriosas — Asparaguses — Cana-
valias — Dolichos — Milletia — Oxypetalum — Petrea — Hidalgo
Wercklei.

WHILE the value of climbers under glass is recognised in most large establishments, where the structures are lofty and afford space enough for their development and display, there is room for their increased cultivation in the conservatories, greenhouses and stoves of smaller gardens, which often stand in need of additional embellishment, although in these smaller buildings there is more danger of the climbers overshadowing the plants beneath, and, if neglected, injuring their growth and beauty. Yet the climber adds so much to the attractions of the conservatory or greenhouse that one or more plants of its habit ought to be grown, even if the more luxuriant growers have to be excluded. Some of the more slender-growing species are charming draping a back wall, twining up a pillar, or hanging gracefully from the rafters above. In the chapter on the soil and management of climbing plants a general idea is given of the cultivation and treatment required for these plants when grown under glass, but one would again impress upon the reader the necessity of the utmost cleanliness, proper ventilation, and the prompt destruction of any

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pests which may make their appearance, or the result will be disappointment to the owner and serious injury to all the plants in the house. Aphides, Scale, Mealy Bug, Mildew, and all other enemies must be destroyed at their first appearance. Shading and ventilation must also be carefully attended to or troubles will inevitably follow. It must be remembered that plants under glass require more care and are more liable to suffer from neglect than those which are cultivated in the open air.

The need of non-climbing plants for covering walls is not so great in the conservatory as outside, where there is usually more space to cover, and it is unnecessary to devote a special chapter to these, but a few are incidentally mentioned among the climbers proper, though these far from exhaust the suitable plants for the purpose.

The Abutilons are very desirable when grown as climbers in the conservatory, as they may be cultivated in pots, as well as planted out, and are not only pretty for covering pillars or for training up the rafters, but also for the supply of cut flowers. They should have a good, turfy loam, plenty of drainage, and some peat and sand in the compost. Unless well supplied with water while growing they become stunted and unhealthy, and too much peat produces excessive leaf-growth. They do not look well when stiffly tied in, but the branches should be allowed to hang from the rafters or project from the pillars. The Abutilons may be raised from seeds, sown in pots or pans in light soil in spring and placed in a temperature of 65 degrees or a little higher. Cuttings strike easily in a similar temperature, especially in spring or early autumn. They may have a similar soil to the old plants but with a little more sand and some leaf-soil. The bell-shaped blooms of all are attractive, and a considerable number of the species and varieties are strong enough to come under the category

of climbing plants. A selection of these will be found in the table at the end of the work. *Darwini*, *Megapoticum*, *pulchellum*, and *venosum* are among the best of the species for climbing, though some of the hybrid varieties are of high value.

The *Allamanda* is one of the prettiest of evergreen stove climbers, its numerous panicles of flowers and fine leaves making a good effect when it is trained to a trellis. On wires a little beneath the glass and with the growths allowed to assume an informal style the *Allamandas* are very pleasing, and do well in pots unless required to cover a large space.

The best method of propagation is by cuttings, struck in bottom heat at almost any season. The tops of the shoots strike readily in leaf-soil or peat and sand, and after rooting the plants may be grown on, pinching in as required to form the necessary shoots for the purpose desired. Fibrous loam, with about one-fourth of sharp sand, and a little charcoal and decayed cow manure, will answer for the plants, which need a temperature of not less than 55 degrees. Annual repotting is advantageous, and they ought to be pruned to within one or two joints of the old wood in the beginning of the year before starting into growth. *Cathartica* and *grandiflora* are suitable for trellises or roofs; while *Chelsoni* and *Schottii* answer for roofs, though *Schottii* does not flower so well as some of the others.

Bignonias are of the greatest value for large conservatories, and should be planted in a prepared border of fibry loam, peat and leaf-soil with some sand, but having their root room rather restricted. Some can be grown from seeds, but the general way of propagation is by root cuttings about an inch long, layers, cuttings of stout growths, of two or three joints, in bottom heat under glass in spring, wiping the bell-glasses dry every morning until the plants are rooted, when they should

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be gradually exposed to the air of the house. They will generally do well in the stove or greenhouse, and are effective climbers with their large, fine flowers on the roof, wall, pillar or trellis. They are best on a single stem until of some height.

Indispensable, also, where climbers are much grown under glass, are the Bougainvilleas, whose showy appearance is in keeping with the most effective of the other occupants of the conservatory or stove. They dislike being confined to a limited space, and are best when allowed to make a free and natural-looking growth on the roof or wall. They are best planted out in a well-drained border in the house filled with a compost composed of about one part of leaf-mould, with three of sound, turfy loam, and a good admixture of sharp sand. The Bougainvilleas are propagated by cuttings of half-ripe wood with a heel, taken off in March, in a good bottom heat, with a glass over them. They are usually rested in winter by restricting the water supply. Pruning is done in January or February, cutting them back in the same way as the Grape Vine, cutting out at the same time any weak or superfluous growths. *Speciosa*, *spectabilis* and *glabra* are the best, the last being generally preferred for pots.

Clerodendrons are also favourite climbers for the stove or greenhouse, and those of climbing habit always rank high in the estimation of those who care for such plants. Turfy loam, with an equal proportion of peat, and a small quantity of leaf-soil, charcoal and sand will make a good compost. When planted out the supply of water should be reduced in winter and the temperature of the stove kept as low as compatible with the needs of other plants, but not less than sixty degrees. They should be cut back after flowering, and at this season propagation may be effected by taking cuttings of the ripe shoots and striking them under a bell-glass in light soil.

Young shoots about eight inches long strike well in summer. Thomsonæ is the most cultivated, and makes a brilliant effect with its crimson and white flowers, but splendens is another of great beauty with its bright scarlet blooms. The variety of this named Balfouri is a favourite for trellis training.

The *Lapageria* is another acceptable climber, and its slender habit and fine flowers make it very suitable for a house in which the reduction of much light is undesirable, or where there is little space. It is best propagated by layers, pegged down and covered with soil, and likes a large proportion of fibrous peat—about three parts—with one of loam, and about a sixth sand and a little charcoal. Raising from seeds is largely resorted to, though the other method is necessary to secure a good variety—an important thing with the *Lapageria*. The root-space should be confined to prevent the appearance of growths in undesirable places, but otherwise the *Lapageria* should have plenty of room. It should have cool treatment with just sufficient heat to exclude the frost.

There are many varieties, but alba may well be grown along with the typical rosea or its best varieties.

The *Ipomœas*, with which is classed the *Batatas*, are desirable twining or climbing plants, and they are generally graceful in a glass structure. They are attractive hanging from the rafters of the stove or conservatory, and also on trellises and pillars in the latter, where their beautiful flowers are seen to most advantage. They are not difficult to grow, and the annuals are raised from seeds, sown in pots, with from two to three seeds in each pot; the perennials being propagated by means of layers or side-shoots, struck in bottom heat. Few can see such fine species as *Ipomœa Learii*, with its glorious blue flowers, or the winter-blooming *Horsfalliæ*, with its bright rosy flowers,

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without admiration. The latter is rather difficult to propagate.

Convolvuluses require the same treatment as the Ipomæas. *C. mauritanicus* is generally cultivated in baskets.

Where there are large houses the Passifloras, or Passion Flowers, ought always to be represented among the climbing plants cultivated. They are best suited for the rafters or roofs, where their free growing habit can be allowed some scope, and their true character displayed. The flowers are very ornamental, apart from the fancied resemblance the parts bear to the cross—which has given rise to the name of “Passion Flower”—and several produce handsome edible fruit. They are best planted out in the house in a border with about ten inches of soil, but they may also be placed in large pots or tubs in good turfy loam, with a little sand and peat or leaf-soil, a similar compost answering for those planted out. They are generally propagated by cuttings of the young growths with a heel, and about six inches or so in length, put in pots of sandy soil under a bell-glass or in a propagating frame. The necessary training is effected by stopping the leading shoots to secure others to cover the space desired, thinning out superfluous growths, and by regulating the direction the remainder are to take. The common Passion Flower, *P. cærulea*, does well in a cold house, where it is too cold for it in the open, but the greater number of those named in the table require stove or greenhouse treatment. There are so many in cultivation that only a selection can be named there.

The allied Tacsonias, which differ little in their botanical characters from the Passifloras, and share with them the popular name of Passion Flower, are equally beautiful, and they give many exquisite and showy flowers. As they are cultivated in the same way as

the *Passifloras*, it is unnecessary to repeat the directions, and it will be sufficient to state that *T. Van Volxemii* is one of the best, and remarkably beautiful with its showy scarlet blooms and its edible fruit.

Of a different order of beauty are the *Thunbergias*, which are pretty annual or perennial twining plants, some of which are more suited for trellises or low pillars than for the rafters or roof, though such species as *coccinea* and *grandiflora* are all comparatively vigorous growers doing best in the stove. They prefer a good soil, composed of loam, sand, and some thoroughly rotted cow dung, and are generally raised from seeds, which germinate freely in a warm house. The perennial species are also increased by means of cuttings of the young growths about four inches long in a propagating frame or under a glass with a temperature of about seventy degrees.

Stephanotis floribunda is one of the most valued of our stove climbers or twiners, as everyone appreciates its deliciously fragrant, wax-like white flowers. A good turfy loam is the most approved soil, though it will grow in peat also, and this should be placed in a bed prepared in the house and the plants trained to a trellis on the roof. It does not like too much heat, and many good growers prefer the intermediate house to the stove for its cultivation. Propagation is effected by cuttings of the previous year's wood of about two joints struck in a heat of sixty degrees, rising to seventy degrees, or of young shoots with a heel.

The fine *Tecomas*, closely allied to the *Bignonias*, should have similar treatment to these plants. *Grandiflora* is one of the best of the greenhouse climbing species, though *jasminoides* is also pretty. The *Adenocalymnas* in cultivation have principally yellow flowers, and should be treated like the stove *Bignonias*, to which they are related.

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Then the *Aganosmas* are showy climbers, not generally known, whose corymbs of flowers are pleasing when open. They like a stove or warm greenhouse, and are cultivated in good, mellow loam, with equal parts of leaf-soil or peat, and sand. Either of those named in the tables are worth growing where neat twining plants are desired. *Akebia quinata*, named also among the hardy climbers, is deserving of a cold greenhouse in colder localities, and is a pleasing twining plant without much brilliance.

Requiring almost the same treatment and closely allied are the *Bomareas* and the climbing *Alstroëmeria densiflora*, both of which are tuberous-rooted twiners, and require hardly any protection save a glass roof over them, such as is yielded by an unheated greenhouse. They like a well-drained soil of peat, leaf-soil and sand, and plenty of water while in growth, but rest in winter. They may either be cultivated in pots or planted out. Propagation is by seeds, sown as soon as ripe in heat, or by division of the tuberous roots. *B. Carderi* and *B. oligantha* are among the best.

Aristolochias are singular-flowered plants and are the object of much interest when in bloom, while the ornamental character of the foliage of almost all the species makes them appreciated at nearly all times. They do best planted out in good, rather rough loam, with a little sharp sand and well-rotted manure, and the greater number are suited for growing round a tall pillar or on the rafters of a large house, though the weaker sorts can be grown on a trellis and in pots. They are increased by cuttings in heat under a glass. A selection from among the best appears in the table.

But few know the West Indian stove climber called *Amphilophium* or *Amphilobium paniculatum*, which has panicles of rosy flowers, and likes a compost of loam, with some peat. It is grown from cuttings of the

young growths in bottom heat, with a glass over them in spring. The difficulty of blooming them properly accounts for the scarcity of the *Antigonons*, pretty stove climbers, in our gardens. They want plenty of light and to be planted in beds over hot-water pipes. Both *amabile* and *insignis* are most charming plants, while *A. Leptopus* is equally handsome with its rose flowers. These bulbs like to be kept dry in winter. They are less known than the magnificent *Gloriosas*, which are aptly named, and which are splendid stove climbers, with magnificent flowers in clusters. They have bulbous roots, and require to be kept dry in winter in the pots in which they are grown. Re-potting must be carefully done in February or March, using loam and peat with some sharp sand for the compost, and starting them into growth in small pots in a heat of sixty to sixty-five degrees. They like plenty of water and a moist atmosphere while making growth. They are propagated by offsets, removed carefully at potting time, by division of the roots, by cutting through the crown so as to retain a bud to each piece, or by seeds sown in heat at the same season. *Superba* is comparatively cheap.

Asparaguses are prized for their graceful foliage, and give a grace and lightness to the house in which they are grown which is yielded by few other plants of similar habit. They do best in a rather warm house in a good loam with some peat sand, and are raised readily from seeds or by division of the roots, or cuttings of the shoots in spring. *Plumosus*, *retrofractus*, *decumbens*, *medeoloides* and *scandens* are among the best of climbing habit.

The genus *Canavalia* is almost unknown in private gardens, but it includes a few species of pretty twiners or climbers suitable for the stove or intermediate house. They are easily cultivated in loam and sand, and are

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propagated by seeds or by root-cuttings in sandy soil under glass. *Ensiformis* is perhaps the best of the few cultivated. Under the same conditions may be grown the *Dolichos*, a tall climber, belonging to the same genus—the *Leguminosæ*. *Lablab* or *lignosus*, a greenhouse evergreen climber, is among the most desirable of the perennial species. *Milletia megasperma*, a fine evergreen climber of the habit of a *Wistaria*, may be cultivated in the same manner as the *Canavalia* and *Dolichos*.

Oxypetalum cæruleum is one of the most charming of greenhouse or stove twiners with its pretty flowers changing from pale blue to lilac. It should be planted out in good loam, and is propagated by cuttings of the young shoots in bottom heat.

In *Petrea volubilis* we have a pretty purple-flowered stove twiner of tall growth, reaching as much as twenty feet in height. It should be in a warm stove, in good soil, and is propagated by cuttings in brisk heat.

Hidalgoa Wercklei, called the "Climbing Dahlia," is a recent introduction suitable for the cool house, in rich loam, or for planting out in summer. It is propagated by cuttings.

CHAPTER IX

CLIMBERS UNDER GLASS (*continued*)

Beaumontia—Begonia—Cestrum—Kennedya—Zichya—Brachysema—Hoya—Physostelma—Plumbago—Senecio—Pleroma or Lasiantha—Adelobotrys—Solanum—Solandra—Bauhinia—Clitoria—Climanthus—Datura or Brugmansia—Hibbertia—Dipladenia—Cissus—Acacia—Mimosa—Semele—Grevillea—Echites—Hardenbergia—Ceropegia—Pergularia—Rhodochiton—Mandevilla—Myrsiphyllum—Littonia—Swainsonia—Testudinaria—Tropæolum—Adhatoda—Argyrea—Chorizema—Combretum—Quisqualis—Fuchsia—Pelargonium—Ficus—Jasminum—Gompholobium—Hovea—Lophospermum—Luculia—Manettia—Sollya—Trachelospermum—Maurandya—Berberidopsis—Cobaea—Holboellia—Rubus—Araucaria—Asystasia—Billardiera—Cryptostegia—Randia—Piper—Smilax.

ONE of the finest of stove climbers is *Beaumontia grandiflora*, of twining habit, and of fine effect with its corymbs of many white, dark-throated flowers. It ought, if possible, to be planted out in the house, and to be propagated by cuttings in bottom heat and under a glass. It likes a good loam and peat, not too fine. Some of the *Begonia*s of tall habit are pretty when trained to pillars or trellises, and one of climbing habit—*scandens*—is nice to train against a wall or pillar. The white flowers are small, however. It requires no special treatment.

Some of the *Cestrum*s are ornamental plants in the stove or greenhouse, growing well in almost any rich soil of an open nature, and requiring little in the way of training but pinching back early in the year. They are propagated by cuttings in early autumn. *Aurantiacum*,

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elegans, and *Newellii*, which do well in a warm greenhouse, are among the best; and the variety of *elegans* called *argentea*, which has prettily variegated leaves, is a choice climber. *C. elegans* is sometimes known in gardens as *Habrothamnus elegans*.

Kennedyas are valuable evergreen climbers for the greenhouse, and thrive in good loam or peat. They look well on the rafters and pillars, and stand a good deal of cutting-in, a valuable character where plants are grown below. The prettiest is probably *prostrata* *Marryattæ*, generally known as *K. Marryattæ*. Seeds form the easiest method of increase, and are sown in heat in spring or summer, though some prefer cuttings of side shoots with a heel struck in spring in gentle heat. *Zichyas* closely resemble the *Kennedyas* and should have the same treatment, as also do the *Brachysesmas*. The *Hoyas* of a climbing habit are fine plants, but none are more worthy of being cultivated than *H. carnosa*, the Wax Flower, whose pinkish-white flowers are so wax-like in their appearance. They all prefer an intermediate house, and like a rather peaty soil, the stronger ones doing best when planted out. *Carnosa* and some others are best when grown on a wall. They are propagated by cuttings of shoots of the previous year, grafting, or layers, and flower on the young wood and the old flower stalks. The spurs from the base of the foot-stalks should not be removed. *Physostelma Wallichii* requires the same cultivation, and resembles the *Hoyas*.

A favourite plant is *Plumbago capensis*, a deciduous shrub, whose pale, charming blue flowers are so ornamental in the greenhouse or conservatory. It flowers on the young wood and should thus be cut well back after blooming. Cuttings of the ripe or nearly ripe wood in bottom heat strike readily.

The pale-yellow *Senecio macroglossus*, which has

Ivy-like leaves, is a useful and distinct plant for a rafter, and grows in loam in a greenhouse. It is propagated by cuttings, which strike readily.

Pleroma macranthum or *Tibouchinia semi-decandrum* (syn. *Lasiandra macrantha*) is one of our best stove or greenhouse climbers, preferring a rather cool stove when in that house, and doing well in turfy loam. The *Pleromas* are propagated by cuttings of soft shoots four inches in length in a warm frame. The species here named is best when planted out in the greenhouse border, but the noble variety *floribundum* does better in pots than the typical species. Allied to this is the rambling *Adelobotrys Lindenii*. Several of the *Solanums* do well for climbers for the stove or greenhouse, and most may be raised from seeds, but others may be increased by cuttings of the young growths struck in heat under a glass. *Seafortianum* is among the most valued, but for cold districts *crispum* and *jasminoides*, mentioned among hardy climbers, may be named as worthy of a place under glass. All like a good loamy soil. The *Solandras* are also fine tall stove climbers of shrubby habit, which do not bloom well if allowed to grow luxuriantly, and require to be almost deprived of water after they have made growth until the leaves begin to fall. They grow in loam and leaf-soil, and are propagated by cuttings in heat.

Bauhinias do not flower very well as a rule, but *corymbosa* ought to do fairly well if properly treated by giving it plenty of sun, and growing it in loam, peat, and sand, pretty firmly potted. They are raised from cuttings and are brilliant evergreen stove plants when in flower. Like many other plants of the order *Leguminosæ*, the *Clitorias* are ornamental plants. They are good stove climbers thriving in a similar soil to the *Bauhinias*, and best raised from seeds, sown in heat in spring, though they can be raised from cuttings as well.

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Ternatea and *heterophylla* are perhaps the best to grow. *Clianthus puniceus*, referred to among hardy climbers, another plant of the same natural order, may be mentioned again as a reminder of its beauty in the greenhouse or conservatory; as well as the *Cobæas*, also mentioned there.

The shrubby *Daturas*, called *Brugmansias* in gardens, are fine for pillars and may be planted out in lofty houses or grown in pots in lower ones, and they thrive in a good loam. Propagation may be performed in spring by striking cuttings of the young growths about six inches in length, with a heel of the old wood attached. After the main branches have reached the desired height the side ones may be cut in close after flowering.

The best of the *Hibbertias* for use as a greenhouse climber is *dentata*, a pretty, dark-yellow flowered species with flowers almost two inches across. It likes peat and loam with some sand, and is propagated by cuttings under a glass in heat. Unless the weak shoots are removed in time this *Hibbertia* is apt to become untidy.

The *Dipladenias* rank among the highest of our warm stove twining plants, and well repay the efforts of the cultivator to secure their brilliant flowers by the effect they produce under glass. They are propagated by eyes or by cuttings of the young shoots, of one or two joints, struck in bottom heat under a bell-glass, in sand and peat in spring, and like a well drained border or sixteen-inch pot filled with fibrous peat with a good dash of sand. They have a fine effect either on a trellis or the rafters or roof of the stove. When the flowers are over the current year's growth may be removed, as the *Dipladenias* flower on the new wood. Heat and frequent syringings are recommended by the most competent authorities. When grown in pots remove as much as possible of the old soil in October, replacing with fresh.

Botanists have generally included the genus *Cissus* with that of *Vitis*, but in gardens the best—that called *Cissus discolor*—is likely to be long grown under its former name. It is the only one of consequence, and is an ornamental-leaved plant of value for the trellis or the roof of the stove. The velvety green leaves are prettily marked with silver. It grows well in rather rough peat with some loam and sand, and is propagated by cuttings under a bell-glass in sand, in heat. Shade is essential to bring out the variegation of the leaves. *Vitis gongyloides* is one of several interesting vines which should be cultivated more largely in the warm house.

Some of the taller growing *Acacias* are very ornamental for growing as climbers on pillars or rafters, and one of the best for this purpose is *A. riceana*, an elegant species with pale-yellow flowers, other good species being *dealbata* and *grandis*. They are grown from seeds, sown as soon as they can be obtained, and also by cuttings of partially ripened wood, taken off with a heel, in peat and sand, and struck under a bell-glass in summer without artificial heat. The number of species prevents full lists of the species suitable being named in the tables. *Mimosa marginata* may have similar treatment, and is valued for its pretty foliage. Another ornamental climber for lofty houses is *Semele androgyna*, a fine foliage plant which grows in peat, loam and sand, and is propagated by division. A few of the taller *Grevilleas* are also well adapted for growing on rafters and pillars in the conservatory or winter garden. Planted out they grow more vigorously than in pots, and are prized for their ornamental foliage and flowers. They are propagated by seeds or cuttings, taken off in spring with a heel, and struck under a bell-glass in heat, and prefer turfy loam, rough peat and sand.

Among the stove twining plants in a large garden there may be included one or two of the genus *Echites*

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—handsome plants admired for their flowers or foliage —which flourish well with the same treatment as that recommended for the *Dipladenias*. *E. Franciscea sulphurea* is one of the best. *Hardenbergias* are pretty Australian twiners for the greenhouse, of easy growth in a greenhouse and flourishing in peat and loam with some sand. They can be raised from seeds, sown in heat in spring, or by cuttings of the young shoots, inserted in pots covered with a bell-glass in a close frame. They grow more freely when planted in a border in the greenhouse than in pots. *Comptoniana* and *monophylla* are among the best, but these are so much alike that one only need be cultivated.

Ceropegias are curious and interesting stove plants, generally of a twining habit. The flowers are wax-like and of singular form. They are propagated by cuttings of side shoots in heat, and prefer a soil composed of peat, sand, and leaf-mould. *Gardnerii* is one of the prettiest of the climbing or twining species. They ought to be rested after flowering. The fragrant *Pergularia odoratissima* requires similar soil and propagation. It ought to be more grown for its sweet odour. *Rhodochiton volubile* is a pleasing greenhouse climber, with red calyx and corolla, which is best cultivated in sandy loam, and propagated by seeds, sown in heat, or by cuttings of young shoots in autumn under a glass.

For conservatories or cool greenhouses the pretty, white-flowered *Mandevilla suaveolens* flourishes in a well-drained border of peat or turfy loam and peat, with some sharp sand, but is not suitable for pots. It is increased by cuttings of short side shoots, struck in sand under a glass, or by seeds, sown in heat when procurable.

For use for decorative purposes, the elegant *Myrsiphyllum* or *Medeola asparagoides*, now called *Asparagus medeoloides*, which has pretty foliage, ought to find a



VITIS GONGYLODES
(*Photo by Greenwood Pim*)

place in a warm greenhouse or stove and be trained up cords or wires. It does best in loam and leaf-mould, and is propagated by seeds, division, or cuttings in heat in spring.

The admirable climbing stove or greenhouse plant, *Littonia modesta*, with fine orange-coloured bell-shaped flowers, is very ornamental in the greenhouse and stove against a pillar. It is usually cultivated like the *Gloriosa*, and does well under such conditions. A popular plant of climbing habit is *Swainsonia coronillifolia* or *galegifolia*, which has good-sized red flowers, and elegant foliage. The white variety, *albiflora*, is a general favourite. It is propagated by seeds, or by cuttings of young growths struck in sand under a bell-glass. Those who wish a curious plant of climbing growth may procure the Elephant's Foot, *Testudinaria elephantipes*, which grows in sandy loam or peat and has a curious root which has given it the name of Elephant's Foot, from a fancied resemblance to the foot of an Elephant. It is difficult to flower.

The tender *Tropæolums* are capital greenhouse or stove plants, and many do not realise the value of some of the varieties of *T. lobbianum* for winter bloom when so cultivated in a warm house, and trained up a trellis. Then there is the beautiful *T. azureum*, with azure flowers, and *T. tricolorum*, which both make fine pot-plants for training to small trellises. These have tuberous roots and should be kept cool and dry until growth begins in spring when they should be repotted. These like a good proportion of peat and sand in the soil.

Adhatoda cydoniæfolia is a distinct-looking evergreen stove climber, which grows in good loam, and is propagated by cuttings of the young shoots in heat in spring. Do not stop the shoots as the plants grow. The *Argyreias*, which are of evergreen habit and also

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suitable for the stove, require much space and are seldom cultivated. They may be grown in pots or planted out.

Chorizema varium Chandlerii is a good low-growing climber. The *Chorizemas* can be grown in peat or loam, and are struck from cuttings of half-ripe wood with a heel in summer. *Combretum purpureum* is a handsome stove climber with fine sprays of flowers. It is increased by cuttings, rather more than half-ripe, struck in heat and thrives in fibry peat with sand. *C. elegans* is also desirable. The allied *Quisqualis indica* is a pretty stove climber.

Nowadays we seldom meet with the *Fuchsias* as a plant for the rafters and roofs of the greenhouse, but those who see these old favourites covering a large space will not readily forget the appearance they present, with their drooping flowers of bright colours. When used as climbers they should be planted out. Until the plants attain the required height the side growths ought not to be removed, although the main stem should be allowed to extend. When it has reached its proper height the side branches may be cut away and the top stopped so as to induce the plants to cover the space desired. Free-growing, long-flowered species and varieties are the best for this purpose. They will grow vigorously in any good soil.

Where many cut flowers are wanted, the Ivy-leaved "*Geraniums*" or *Pelargoniums*, of long-jointed growth are capital plants for a wall; flowering freely when planted out and giving great quantities of blooms for cutting. Some of the strong growing *Zonals* can also be trained on a wall or on the roof for cut bloom, but they do not look so well as the Ivy-leaved varieties. They like a rich loam.

For covering walls closely with fresh foliage, *Ficus stipulata*, or *repens*, and its variety *F. s. minima* may

be used with advantage in the greenhouse. These prefer loam, peat, and a little sand, and are propagated by cuttings of the side growths in a little heat at any season. The greenhouse and stove *Jasminums* are deservedly favourites, which like rough loam with the addition of well-rotted manure and some sand, and are propagated by cuttings of shoots of a few inches long, taken off with a heel, and struck in a temperature of about 70 degrees under a glass in sand. *Sambac fl. pl.*, and *Duchesse d'Orleans* are among the best of the stove species or varieties, while *grandiflorum* and *odoratissimum* are good for the greenhouse.

The *Gompholobiums* are pleasing evergreen plants for a greenhouse where the temperature does not fall below 40 or 45 degrees in winter, and have beautiful pea-shaped flowers. They like a soil of fibrous peat, not too rough, with a little sand, and are increased by cuttings of the shoots about the end of April, when a little firm, struck in sand and covered with a glass in an intermediate temperature. They must be carefully trained from their earliest stages, and are suitable for trellises. In the *Hoveas* we also have some pretty Pea-shaped climbers of evergreen habit, which are ornamental on the roof or end wall of a conservatory. *Celsii* is the best, and is valued for its blue-purple flowers. It likes a fibrous peat or loam, with a little sharp sand, and is propagated by seeds sown in heat in February, or by cuttings of the half-ripened shoots. Some of the *Lantanas* make good wall plants if planted out, and one of the best for this purpose is *L. Camara*, which grows in peat and loam, and is propagated by cuttings.

The *Lophospermums* are now included by botanists with the *Maurandias* and are capital for the roof or pillars of a greenhouse and are pleasing with their pretty blossoms and bright colours. They are readily raised

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from seeds or from cuttings of the shoots, struck in spring in a heat of about 63 degrees, and kept close. They like a sandy peat soil, and grow pretty freely. For a back wall we have in *Luculia gratissima* a most valuable plant for the intermediate house, where its pinkish-white flowers are welcome. For this purpose it ought to be planted out in loam, with the addition of some peat and sand, a little rough. Propagation is accomplished by means of cuttings of the young shoots, about March, in a night temperature of not less than 60 degrees. The *Manettias*, with their pretty tube-shaped flowers and slender growth, are suitable for the roof of an intermediate house, and are easily grown there or in a stove in sandy peat. They are propagated by cuttings of young shoots in spring, struck in heat and kept moist. *Bicolor*, now called *lutea-rubra*, is one of the best.

The pretty, blue-flowered, twining *Sollyas* are easily cultivated, evergreen, greenhouse plants, which are not free-growing enough for the roof and are best for a trellis or a pillar. They are struck from cuttings of shoots with a heel in spring, and like a compost fibrous peat and some sand. They can do with more limited root space than many climbers.

A plant which is deservedly prized for its fragrance and beauty, and which can even be grown on a wall in the sunny south of England or Ireland in the open, is *Trachelospermum jasminoides*, frequently known as *Rhynchospermum*, which has white flowers resembling those of the Jasmine. It is suitable alike for the cool house or for the stove, and can be cultivated in fibrous loam and sand. Propagate by cuttings of the young shoots when half-ripe about six inches long about the month of July, struck under a bell-glass in gentle heat. *Maurandias*, *Berberidopsis*, *Cobæa scandens*, *Holboellia latifolia*, *Rubus australis* and *Araujia sericofera* are all referred to in previous chapters.

Asystasia scandens is a stove evergreen which likes loam, peat and sand, and is propagated by cuttings in April. The *Billardieras* are ornamental evergreen plants, thriving in loam and peat, and propagated by cuttings or seeds. *Cryptostegias* are pretty stove climbers propagated by cuttings in bottom heat and thriving in loam, peat and sand. The shrubby *Randia macrantha* has long-tubed yellow flowers and is a good stove plant, preferring fibrous loam and peat, with some sand.

These brief notes upon the various climbers for growing under glass—exclusive of the annuals, which see in the chapter devoted to these—may be concluded with a mention of two pretty foliage plants. These are respectively the *Smilaxes* and *Piper porphyrophyllum*. The former are capital twiners for the stove or greenhouse, *Australis*, *discolor*, and *ornata* being among the best for the purpose; the two last having ornamental foliage. They like sandy loam, and are increased by division. The stove climber *Piper porphyrophyllum* has beautiful bronze-green leaves with pink spots, the under-surface being purple. It likes a rich loam and is propagated by cuttings of half-ripe growths. For a number of other climbers and shrubs suitable for cold or slightly heated houses reference should be made to those in other classes marked with an asterisk.

CHAPTER X

THE ROSE AS A CLIMBER

Its Beauty and Uses—The Species and Old Roses—The Modern Roses—Single Roses—Soil—Pests—Pruning—Under Glass.

THE Queen of Flowers, as we admiringly and affectionately term the Rose, is one of the finest of all plants used as climbers, and it is pleasant to see how much its cultivation in this free and natural form is extending everywhere. We all recognise how much of the beauty of our woods and hedges in June is due to the wild Roses which grow among them, and we still more appreciate the many Roses which the garden yields with such charming forms and so much beauty of habit and growth. We see how these climbing Roses can change the aspect of even the stiffest and ugliest wall, and how much the beauty of a noble building or a stately terrace is heightened by the judicious use of the best of our Roses of climbing habit. Even a lowly cottage with an old climbing Rose rambling over its porch or up the roof is ennobled by the flower.

So, also, we can all realise how much of the loveliness of the garden in summer is yielded by the Roses which span the paths on arches, shade its arbours, or screen the bare and hard wall with fresh foliage and gracious flowers, exhaling the fragrance which is one of the chief charms of this favourite of the past and the present. On the pergola, also, it is seen to advantage; and the verandah is made more attractive by its sweet flowers, so pleasing alike to the senses of vision and smell.

In recent years a new use has been found for the

Rose, and one, too, which displays to great advantage the beauty and grace of the stronger growing forms. This is as a climber for covering old or valueless trees, which so many of the species and old-fashioned garden Roses will do with the most delightful effect, adding a loveliness indescribable to some gnarled tree, and covering it with a cloud of fragrant and exquisite flowers. On these trees such Roses as the old Ayrshires and Boursaults may be trained, if it is justifiable to call that training which practically consists in giving them freedom to develop and to ramble on and over the branches in their own way.

Another use of the Rose as a climber is not so much adopted as might well be. This is to establish it in some semi-wild spot by planting it freely among the copses and rough places which are to be found on so many estates. Many a beautiful glen, valley, or copse might be made more charming still were the best of these climbing Roses planted freely and plentifully so as to roam here and there; rambling over trees, trailing up or down banks, or over some great rock. For this some of the species are admirable, but among the old garden forms there is no lack of choice, and one can hardly go wrong among them, though the original species appear to be more in unison with these surroundings. Polyantha, Brunoni and such free species are glorious things when left to grow almost untrammelled in such a place. These Rose species would well repay the search of some who would seek them out and use them in the wilder parts of their grounds, for apart from the flowers, there are charms of colouring in the autumn tints of the leaves of many, as well as interesting and beautiful hues in the stems or the prickles which serve as the support of the Roses. Fine, also, are the fruits, whose bright colouring often shows on the bushes until far into the winter time.

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These remarks in favour of the old-fashioned Roses and the species, as untouched by the hybridiser or the seedling raiser, must not be held as expressing depreciation of the graces of the modern flowers of climbing growth. It is to these, indeed, that we largely owe the present popularity of the Rose as a climber, for the popular Crimson Rambler with its glowing flowers has done more to further the growth of climbing Roses than can well be estimated. We cannot have too many of such free-flowering Roses, and the numerous newer introductions of the same character have met with a demand which shows how entirely they meet the tastes of the time.

Then, where less rampant growth is required, together with larger flowers, the climbing Hybrid perpetuals and Teas may well have a fitting place in the garden; while no one can afford to despise or neglect the Hybrid Teas, a class of the highest worth for the lover of Roses.

The single Roses, also, are much appreciated for pillars, such as Carmine Pillar or Paul's Single White being of great beauty, though as a rule the best of these single-flowered species have blooms which have but short-lived loveliness. For covering low walls or trellises, or trailing over a small shrub, the pretty *Rosa Lucie* or *wichuraiana*, with the hybrids raised from it, ought to be cultivated. The small flowers are plentifully produced, and the species itself has beautiful glossy foliage, not shown of equal beauty, however, by all its progeny. It would take too much space to detail the Roses, but a selection of climbing species and varieties appears in the tables at the end of the work, and many more may be found in the catalogues of the leading Rose growers, whose lists are well worth studying by all intending purchasers.

The cultivation of the Rose as a climber in the open

does not call for lengthened remarks additional to those employed in Chapter II. The general directions there given apply to the Rose as well as to other climbers, yet it may be desirable to emphasise a few points.

The soil ought to be well prepared and thoroughly manured, it being remembered that the Rose is a plant which prefers a rather heavy and rich soil. This prepared soil ought to extend a considerable distance from the roots as at first planted, for the Rose is a great feeder, and climbing Roses which have to extend their stems and branches over a large space, ought to be even better provided for than the dwarf forms. One has too often seen stunted, unhealthy, climbing Roses which had had their roots jammed into small holes made by the side of a gravel path, yet were expected to cover a high wall with healthy foliage and pretty flowers. It is almost superfluous to say that disappointment resulted.

While cleanliness and the destruction of insect pests are important for all climbers, few suffer more or lose their beauty so much from their attacks as the Rose, aphides being among its worst enemies, especially on walls. The barer the walls the more liable are the Roses to such attacks, and every effort should be made to secure vigorous growth; also they should be freely syringed, and approved insecticides applied at once. Mildew and other fungoid diseases are also troublesome, some varieties being more subject to them than others, but a cold, draughty position encourages their appearance. Moths, saw-flies and gall-flies with their larvæ are also troublesome.

The pruning of climbing Roses differs considerably from that of the dwarf varieties cultivated for their large blooms, and the aim ought to be to secure as much flower as possible, together with a free and luxuriant growth. In most climbing Roses old and weak shoots and growths ought to be cut out, leaving those which

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are to produce the next year's bloom almost at their full length. A brief summary of the practice of the leading growers in pruning the various classes is as follows:—

Hybrid, Perpetual, Tea and Hybrid Tea Roses should be allowed to retain vigorous shoots to nearly their full length, removing all weak wood. The Noisettes should have the old, worn-out wood and the weak shoots removed, Bourbons requiring practically the same treatment. The climbing Polyanthas ought to have the crowded shoots thinned out after flowering, taking out at the same time all exhausted wood. Evergreen Roses of the *Sempervirens* section may have the weak wood taken out and the best of the shoots left, only taking off the weak and unripened tips of these. The strong growing Ayrshire Roses require a similar pruning, this method also suiting the Musk Roses. The *Wichuriana* Roses only require a slight thinning out and shortening of the longer branches. The *Boursaults* should have the tips shortened in spring, and the weak growths taken out with the worn-out wood after flowering.

THE CLIMBING ROSE UNDER GLASS

It is unnecessary to say much about the Rose under glass, as all are aware of its beauty and the value of the flowers it produces. *Maréchal Niel* is, of course, a general favourite, and is more grown than any other in this fashion, but almost any of the Tea or Hybrid Tea Roses are of high value for cultivating under glass. They do best planted out, but may also be cultivated in pots, where they require liberal treatment. The attacks of mildew, aphides and red spider are those most to be feared in the case of Roses under glass, and the first is one of the worst enemies, being frequently caused by the free ventilation necessary for other plants beneath. The ventilation ought, however, to be given so that cold

currents of air do not impinge on the Roses, especially at the early season of the year. Dusting with flowers of sulphur the affected plants should be adopted immediately on the discovery of its presence, which is shown by the curling of the young foliage. Syringing is the best thing for red spider, and this should be done twice a week or a little oftener in winter, and daily in summer. Should aphides attack the plants fumigating must be resorted to.

CHAPTER XI

THE CLEMATIS AS A CLIMBER

Its Beauty—The Species—Prolonged Period of Bloom—Disease—Shading Stems—Preparation of Soil—Training and Pruning—Propagation—Under Glass.

THE Clematis forms such an admirable ornament to our gardens, and is so popular among all who have a love for climbing plants, that a greater space may be devoted to the flower and its requirements than is generally given to other genera in this work. It is so varied in its character that it adapts itself readily to many decorative effects, and in almost all its forms is so beautiful that few gardens seem as if they were incapable of improvement when this flower is absent from its walls and its trees. It gives us clouds of small flowers and masses of foliage to trail up a tree or a wall; it gives us masses of bright flowers of great beauty on less vigorous growth, or it yields us large and perfect single or double flowers of the highest beauty. The Clematis may be used alike on the wall, the trellis, the arch, the pergola, or clambering up a tree.

While it must be said that much of the popularity of the Clematis and its free use are due to the many exquisite hybrids which have been introduced from time to time, there are many beautiful species of which little is known by the great number of growers of these flowers, which would well repay the cultivator and which are destined to give us through the skill of the hybridiser flowers of a character yet undreamt of. If

we consider the period over which the Clematis in its various forms supplies its flowers we are no less impressed by its value. Summer brings with its early days the pure white blooms of *C. montana*. The *Lanuginosa*, *Patens*, *Jackmanni*, and other hybrids keep up the succession, while later, *crispa* and some others give their blooms in the open, and *indivisa* yields its exquisite white flowers under glass. All of these are beautiful, and even our native *C. Flammula* and *C. Vitalba* are of value where free growth is desired. Then the small-flowered *Viticella* has become the parent of several beautiful single and double flowers, which, by the way, are less subject to the Clematis disease than other sections of the race. Though smaller than those of the universally cultivated *C. Jackmanni*, these make up by their profusion of flowers what they are lacking in size. Then by hybridising the lovely *C. coccinea* many beautiful new plants are making their appearance which are sure to be prized for their pretty flowers.

It is to be regretted, however, that the Clematis has a powerful obstacle to its introduction into many gardens in the disease to which it is subject and which has already been incidentally referred to in speaking of *C. Viticella*. No exact and infallible cure has been found for this disease and, despite all efforts, it has been found impossible to retain the Clematis in many gardens because of its attacks. It is to be hoped, however, that a remedy may be discovered, and we may trust, at least, that the raising of new hybrids will give us flowers of equal beauty with a better disease-resisting constitution. One learns that in gardens where neither the large-flowered nor the *Jackmanni* Clematises will thrive the non-climbing *C. davidiana* grows perfectly well.

It has, however, as mentioned elsewhere, been discovered that the losses of some Clematises are due to the action of the sun on the lower portions of the stems,

and that they are healthier when these parts are shaded by other plants. This is a valuable discovery, and those who have hitherto failed with these lovely flowers will do well to adopt some method of shading the lower stems. This is not to be taken as advising a shady position for the Clematis, for it is usually a sun-lover, but only as regards the portions of the stems near the ground or for two or three feet above.

Like most climbing plants, the Clematis demands and repays the most generous treatment in the way of preparation of the soil, and it is to be feared that this is not always afforded, with the result that poor, weak, flowerless growths are made and disappointment results. The soil ought to be deeply trenched, and plenty of rotten manure added, with a proportion of lime, and a good dressing of basic slag. It is a plant which naturally likes a calcareous soil, and, even when established, thrives all the better if it is afforded an annual top-dressing of rotted manure and some lime, with a little leaf soil or some good loam. The general directions as to planting climbers will apply otherwise.

The Clematis well repays by greater beauty some attention in the shape of proper training and pruning. It is frequently neglected in the way of training until the young shoots are so intermingled and entwined that it is injured when an attempt is eventually made to disentangle the growths. The large-flowered forms, in particular, ought to be carefully tied with raffia or some other soft material to keep them in the direction desired. Pruning, also, is worthy of more care than it receives at the hand of the amateur. Those Clematises which flower on the old wood require very little attention, except in the way of cutting out all weak and straggling shoots, and shortening the others to a small extent only. The *patens*, *florida*, *lanuginosa*, and *montana* sections practically all require this treatment, which

may be performed in February or March. On the other hand, those of the types of *C. Viticella* and *C. Jackmanni*, which bloom on the young growths, may be cut back to within a few inches of the ground in November.

The greatest favourites among the Clematises are, perhaps, the large-flowered hybrids, though for freedom of blooming they are surpassed by those with smaller flowers, such as *Jackmanni*. All of these are very beautiful and much prized either in the open or in pots under glass. A selection of good varieties is given in this work, though that is not to be regarded as implying inferiority on the part of the varieties not named. The *Viticella* type also deserve a little more notice than they have received in Britain, and the French raisers have added some valuable forms, among them being one with bunches of double purple flowers which at a distance look like bunches of grapes. It is superfluous to say much about the *Jackmanni* section, whose original, *C. purpurea*, or *Jackmanni*, has a fine companion in Smith's Snow-white *Jackmanni*. Then, the hybrids of *coccinea* are very beautiful, and are still being improved; while from the union of various other species some new forms are being produced. *C. indivisa*, as best represented by its fine form, *lobata*, is a charming thing with its profusion of sweet-scented flowers under glass, for it requires a greenhouse, where it may be cultivated in pots or in a border. For clambering up a tree or covering a large space, our native *Flammula* or *Vitalba* may be employed, while good winter or spring flowerers for sheltered places will be found in *calycina*, *crispa*, or *cirrhusa*. A pretty species with yellowish flowers is *orientalis* or *graveolens*, which is easily raised from seeds. *C. alpina*, or *Atragene alpina*, is a pretty species of moderate growth.

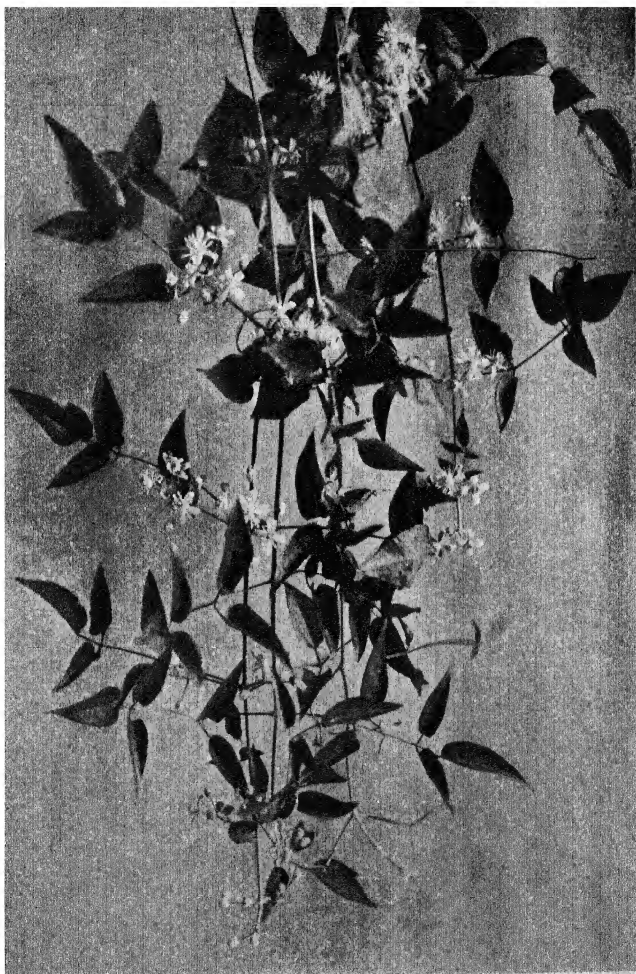
The Clematis is most frequently propagated by

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grafting the varieties on the roots of free-growing species, such as *Flammula*, in heat as early in the year as possible. The roots are lifted from the open ground, cut into pieces, split open, and the scions (of the young shoots) inserted and tied in position with matting or raffia. Place these in small pots, and plunge in a warm, moist propagating frame until the scion and roots unite, when they may be hardened off. Layering is the simplest method for the amateur who may only require a plant or two. Layers take about a year to root in the open ground; they can then be separated from the parent plant. Cuttings of the young shoots, with one or two eyes, can be struck in heat in small pots of light soil in a propagating frame. Seeds are a suitable means of propagation for some of the species, but the varieties of others are not to be relied upon to be equal to the parents. Such species as *Flammula*, *Vitalba*, or *orientalis* grow readily from seeds and the last will bloom in the first or second year. Sow in sandy soil in spring in moderate heat, giving air when the seedlings are up, and pricking out into single pots when large enough.

THE CLEMATIS UNDER GLASS

There are few prettier climbers for growing under glass than the large-flowered hybrid Clematises, both the single and double flowered varieties being admirably suited for the rafters or walls, while the whole of these large-flowered varieties are highly ornamental if grown on trellises, either in pots or planted out. The soil suitable for the outdoor plants will answer well, and no special care beyond careful training and the destruction of green fly and other pests will be required. A temperature not much higher than 40 to 50 degrees is very answerable for these Clematises.



WILD CLEMATIS (*C. VITALBA*)
(*Photo by Henry Irving*)

Undoubtedly the most valuable of the tender Clematises for cultivation under glass are the lovely *C. indivisa* and its variety *lobata*. They require the same treatment, which comprises a winter temperature with about 40 degrees at night, which should not be exceeded. They are best planted out in a thoroughly drained border of loam, peat, and sand, rather rough and with some small lumps left in. Propagation is effected by grafting or by cuttings as in the case of the others. Red spider and scale are among their most troublesome enemies.

CHAPTER XII

SELECTIONS OF CLIMBING PLANTS AND WALL SHRUBS

Annual Climbers—Hardy Deciduous and Herbaceous Climbers—Hardy Evergreen Climbers—Hardy Wall Shrubs—Climbers for Growing under Glass—Roses—Clematises.

ANNUAL CLIMBING PLANTS

(With some Perennials which may be flowered the same year as sown.)

Hardy.

Amphicarpea monoica, violet and white.

Convolvulus major, in variety (*syn.* *Ipomœa purpurea*)

Echinocystis lobata, white, fruit spiny.

Ipomœa purpurea, in variety.

Lathyrus odoratus, Sweet Pea, in variety.

—— *sativus azureus*, blue.

—— *tingitanus*, red-purple.

Maurandya barclayana, violet-purple, etc

Tropæolum lobbianum, in variety.

—— *majus*, *Nasturtium*, in variety.

—— *peregrinum*, Canary Creeper, yellow.

Half-hardy.

Adlumia cirrhosa, pink, biennial.

Cobæa scandens, violet.

—— *macrostemma*, yellowish.

Cucumis acutangulus, curious fruit.

—— *Dudaim*, melon-like fruit.

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- Cucumis erinaceus*, Hedgehog Cucumber, spiny fruit.
 — *myriocarpus*, Gooseberry Gourd, small fruit.
Cucurbita melanosperma, Malabar Gourd, variegated fruit.
 — Pepo, various small fruits.
Cyclanthera pedata, green, yellow, small spiny fruit.
Dolichos Lablab, violet (*syn.* *Lablab vulgaris*).
Ecremocarpus scaber, orange (*syn.* *Calampelis scabra*).
 — — *roseus*, rose.
Grammatocarpus volubilis, yellow.
Humulus japonicus, Japan Hop, foliage.
 — — fol. var., foliage blotched white.
Ipomœa grandiflora alba, Moonflower, white, } varieties
 — — *Hesperus*, white, } of I.
 — — ————— } Bona-Nox.
 — *hederacea*, in variety.
 — — *Huberi*, variegated leaves.
 — — *imperialis*, large flowers.
 — *purpurea*, in variety (*Convolvulus major*).
 — *Quamoclit*, Cypress Vine, in variety.
 — *versicolor*, red (*syn.* *Mina lobata*).
Maurandya scandens, rosy-purple.
Mina lobata (*see* *Ipomœa versicolor*).
Momordica, in variety, fruiting Gourds.
Passiflora gracilis, white, fruit red.
 — *lutea*, yellow.
Thunbergia alata, various.
Trichosanthes anguina, white, long fruit (*syn.* *T. Colubrina*).

Tender.

- Citrullus vulgaris*, Water Melon, st., yellow.
Ipomœa Bona-Nox (*see* Half-hardy Annuals).
 — *Quamoclit*, Cypress Vine, grh., in variety (*syn.* *Quamoclit vulgaris*).
Porana racemosa, grh., white.

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Thunbergia alata, in variety.

Trichosanthes palmata, st., white.

HARDY DECIDUOUS AND HERBACEOUS CLIMBERS

Actinidia Kolomikta, white, summer.

— *volubilis*, white, June.

* *Akebia quinata*, purple-brown, March.

Ampelopsis (*see also* *Vitis*), *aconitifolia*, *quinquefolia* (*hederacea*), *serjaniæfolia*, *tricuspidata* (*A. Veitchii* or *Vitis inconstans*).

Amphilophium paniculatum, rose, st., June.

Apios tuberosa, brown-purple, scented, August.

Aristolochia Sipho, yellow and brown, foliage, July.

Atragene (*see* *Clematis*).

Berchemia volubilis, green and white, June.

Calystegia dahurica, pink and purple, July.

— *pubescens*, fl. pl., double pink or white, June.

Celastrus scandens, yellow, May.

Clematis (*see* separate list).

Convolvulus althæoides, rosy purple (low twiner), June.

— *Scammonia*, cream, July.

— *tenuissimus*, pink (low twiner), July.

Cynananchum acutum, white or pink (twiner), summer.

Decumaria barbara, white, July.

Hablitzia tamnoides, green, autumn.

Humulus Lupulus, Hop, yellowish green, July.

* *Hydrangea petiolaris*, white, April.

Ipomœa pandurata, white, purple throat, June.

Jasminum nudiflorum, Winter Jasmine, yellow, winter.

— *officinale*, white, July.

— *fruticans*, yellow, July.

Lathyrus grandiflorus, rose, July.

— *latifolius*, rose, summer, many varieties such as *alba*, white, *delicata*, pink, *splendens*, deep rose, etc.

* — *nervosus*, blue-purple, July.

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Lathyrus rotundifolius, rose, July.

Lonicera (Honeysuckle), *Caprifolium*, yellow, scented, May, etc.

—— *etrusca*, yellow and purple, scented, May.

—— *flava*, light yellow, June.

—— *flexuosa* (*see japonica*).

—— *hirsuta*, yellow, June.

* —— *japonica*, red and white, July.

* —— —— *flexuosa*, yellow (*syn.* *L. brachypoda*).

* —— —— —— *aureo-reticulata*, golden-netted leaves.

—— *Periclymenum*, Common H., red and purple-yellow, scented, summer.

Lycium barbarum, purple and yellow, June.

—— *vulgare*, pale violet or pink, June.

Menispermum canadense, yellowish, June.

Megarrhiza californica, curious fruit, summer.

Muehlenbeckia complexa, green, foliage.

Mutisia decurrens, orange, summer.

Periploca græca, green and brown, July.

Polygonum baldschuanicum, white, summer.

Rhus Toxicodendron, Japanese Form, foliage (*syn.* *Ampelopsis Hoggii*).

Roses (*see separate list*).

* *Rubus australis*, pink or white, needs a wall.

—— *biflorus*, white, fruit yellow, May.

—— *fruticosus* (Blackberry, Bramble), *albus plenus*, double white, July.

—— —— *roseus plenus*, double rose, July.

—— *laciniatus*, Parsley-leaved Bramble, white or rose, August.

—— *phœnicolasius*, Japanese Wineberry, pale pink, fruit scarlet, June.

* —— *rosæfolius coronarius*, double white, August.

* —— *spectabilis*, red, fruit red, May.

Schizophragma hydrangeoides, climbing *Hydrangea*, white or pinkish.

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Tropæolum speciosum, Flame Nasturtium, scarlet, July.
Vitis (Vine) *æstivalis*, fruit black.

—— *californica*, fruit black, leaves small, scarlet in autumn.

—— *candicans*, Mustang Grape, handsome leaves.

—— *capreolata*, fruit small, black.

—— *Coignetia*, leaves handsome, fine colour in autumn.

—— *cordifolia*, fruit blue or black.

—— *flexuosa major*, fine colours in autumn.

—— *pterophylla*, fruit violet, inedible, quick grower.

—— *heterophylla humulifolia*, Turquoise-berried Vine, pretty leaves, fruit china-blue.

—— *inconstans*, well known as *Ampelopsis Veitchii* or *tricuspidata*.

—— *labrusca*, American Plum Grape, fruit purple or yellowish.

—— *lanata*, fruit purple, leaves scarlet in autumn.

—— *Thunbergii*, fruit small, black, leaves very large and fine.

—— *vinifera*, Common Grape Vine, fruit various.

—— ——— *lanceolata*, leaves in five segments.

—— *vulpina*, Bullace, fruit purplish.

Wistaria brachybotrys, violet purple, April.

—— *chinensis*, purple, May, etc.

—— ——— *alba*, white.

—— ——— *flore pleno*, double flowers.

—— ——— *macrobotrys*, white, tinted purple.

—— ——— *multijuga*, purple.

—— *frutescens*, bluish purple, or white, July.

—— *japonica*, white, July.

HARDY EVERGREEN CLIMBERS

[NOTE.—Those marked with an asterisk require some protection in cold districts, and some are practically deciduous in these places.]

* *Araujia grandiflora*, white, scented, summer (*syn. Schubertia*).

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- * *Araujia sericofera*, white, August.
- * *Berberidopsis corallina*, red, summer.
- * *Bignonia capreolata*, orange, June.
- * *Billardiera longiflora*, greenish-yellow, berries blue,
July.
- Clematis* (*see* separate list).
- * *Clianthus puniceus*, Parrot's Claw, red, May.
- — — *magnificus*, brighter, May.
- * *Cocculus carolinus*, greenish, June.
- * *Eccremocarpus longiflorus*, yellow and green, July.
- * — — — *scaber*, orange, July.
- — — *roseus*, red, July.
- Ercilla* (*Bridgesia*) *spicata* or *volubilis*, purplish, summer.
- Hedera Helix*, Ivy, in great variety.
- * *Holboellia latifolia*, purple or greenish, March.
- * *Jasminum revolutum*, yellow, summer.
- * *Lardizabala bitermata*, purple, December.
- * *Mitraria coccinea*, red, July.
- * *Passiflora cærulea*, blue, August.
- — — *Constance Elliott*, white, August.
- * *Smilax aspera*, } foliage.
- *rotundifolia*, }
- Stauntonia hexaphylla*, white, April.
- * *Tecoma australis*, yellowish white and purple, June.
- * — — — *capensis*, orange-red, August.
- * — — — *radicans*, orange, July.

HARDY SHRUBS FOR WALLS

[NOTE.—Those marked with an asterisk may require covering in winter in cold districts.]

- Abelia rupestris*, low wall, pinkish, September.
- * — — — *triflora*, low wall, white, September.
- Aristotelia Macqui*, green, black berries, May.
- Asimina triloba*, purple and yellow, May.
- Azara microphylla*, greenish, berries orange, spring.

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- * *Azara Gilliesii*, yellow, May.
- Benthamia fragifera* (*see* *Cornus Capitata*).
- Berberis nepalensis*, lemon yellow, summer.
- several others.
- * *Buddleia globosa*, orange, May.
- * —— *lindleyana*, purplish red, September.
- * *Cardiandra alternifolia*, white and lilac.
- * *Carpenteria californica*, white, June.
- Caryopteris Mastacanthus*, low wall, lavender, autumn.
- —— *albus*, white, autumn.
- Ceanothus americanus*, white, July.
- —— *azureus*, blue, July.
- —— varieties and hybrids.
- * —— *dentatus*, blue, July.
- Chimonanthus fragrans*, whitish, or yellow and purple,
December.
- —— *grandiflorus*, larger.
- Choisya ternata*, white, summer.
- * *Cistus*, many species, summer.
- Clerodendron foetidum*, lilac-rose, August.
- * —— *trichotomum*, red, September.
- Colletia cruciata*, foliage and spines.
- * *Cornus capitata*, green and yellow, fruit scarlet, August.
- *Kousa*, yellow and white, August.
- * *Corokia Cotoneaster*, yellow, summer.
- Corylopsis spicata*, pale yellow, February.
- Cotoneaster microphylla*, white, April.
- Cydonia japonica*, many varieties.
- *Maulei*, red.
- Cytisus*, in variety, spring and summer, *albus*, white,
præcox, cream, *Scoparius andreanus*, brown and
yellow.
- *Desfontainea spinosa*, scarlet and yellow, August.
- * *Drimys Winteri*, white, May.
- Elæagnus argentea*, yellow, silvery foliage, July.
- *glabra*, whitish, pretty leaves, August.

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Elæagnus macrophylla, greenish-yellow, pretty foliage

—— *multiflora* or *longipes*, fruit, orange.

—— *pungens*, yellowish, ornamental leaves,

—— variegated forms of *glabra* and *pungens*.

* *Embothrium coccineum*, scarlet and orange, May.

Enkianthus japonicus, white, February.

* *Escallonia floribunda*, white, July.

* —— *macrantha*, crimson-red, June.

—— *philippiana*, white, July.

* —— *punctata*, red, June.

* —— *rubra*, red, July.

* *Eucryphia pinnatifolia*, white, August.

Euonymus japonicus, foliage, many varieties.

* *Fabiana imbricata*, white, May.

Forsythia intermedia, yellow, March.

—— *suspensa*, yellow, March.

—— *viridissima*, yellow, March.

Fremontia californica, yellow, April.

* *Fuchsia*, several species and varieties.

Garrya elliptica, pretty catkins, October

Gordonia Lasianthus, white, September.

Indigofera gerardiana, pink, July.

Kerria japonica fl. pl., yellow, summer.

Lespedeza bicolor, rosy-purple, October.

* *Lippia citriodora* (*Aloysia*), white or lilac, August.

Magnolia glauca, white, May, etc.

—— —— *major*, large flowers.

—— *grandiflora*, white, summer.

—— *obovata*, purple and white, April.

—— *Yulan* or *conspicua*, white, March, etc

—— —— *soulangeana*, white, tinted purple

Menispermum canadense, yellowish, summer

* *Myrtus communis*, white, June.

* —— *Ugni*, pink, July.

* *Olearia stellulata*, white, dwarf, June.

—— *Haasti*, white, autumn.

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- Osmanthus aquifolium*, white, autumn.
* *Ozothamnus rosmarinifolius*, white, July.
Philadelphus coronarius, white, May.
—— *gordonianus*, white, July.
—— *grandiflorus*, white, June.
—— several other species and varieties.
* *Phillyrea angustifolia*, white, May.
—— *latifolia*, white, May.
* *Photinia japonica*, white, autumn.
Pittosporum Tobira, white, August.
Plagianthus betulinus, white, summer.
Prunus, several species.
* *Punica granatum*, Pomegranate, red, August.
* *Raphiolepis japonica*, white, June.
Ribes speciosum, red, summer.
—— other flowering species.
Rosmarinus officinalis, low wall, whitish and purplish,
February, etc.
—— ——— *variegatus*, variegated leaves.
* *Solanum crispum*, blue, June.
* ——— *angustifolium*, blue, June.
* ——— *jasminoides*, white, June.
* *Stuartia pentagyna*, cream.
* ——— *virginica*, white.
Styrax japonicum, white, spring.
Viburnum, almost any of the taller *Viburnums*, such as
Opulus and its varieties, dilatatum, etc.
Vinca major, blue, spring.
* *Vitex Agnus-Castus*, lilac, August.
Xanthoceras sorbifolia, white and red, summer.

CLIMBERS FOR GROWING UNDER GLASS

[NOTE.—h.h. = half-hardy ; grh. = greenhouse ; int. = intermediate house ;
st. = stove].

- Abutilon Darwini*, orange, grh., or st., April, etc.
—— ——— *tesselatum majus*, leaves mottled yellow.

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- Abutilon Fleur d'or, light orange and red, grh., April, etc.
- Megapotamicum, red and yellow, grh., autumn.
- pulchellum, white, grh., July.
- Princess Marie, rosy lake, grh., April, etc.
- Boule de Neige, white, grh., April, etc.
- Canary Bird, yellow, grh., April, etc.
- venosum, orange, veined red, grh., July.
- Acacia riceana, yellow, grh., May.
- armata, yellow, grh., April.
- Adelobotrys Lindeni, white and purple, st.
- Adenocalymna comosum, yellow, st., September.
- Adhatoda cydoniæfolia, white and purple, st., October.
- Aganosma caryophyllata, yellow, scented, st., October.
- Roxburghii, white scented, st., October.
- Allamanda Aubletii, yellow, st., June.
- cathartica, yellow, st., June.
- Chelsoni, yellow, st., June.
- grandiflora, yellow, st., June.
- nobilis, yellow, st., July.
- Schottii, yellow, st., September.
- Alstroëmeria densiflora, red and black, grh., summer.
- Antigonon amabile, rose, st.
- leptopus, crimson, st., August.
- Araujia sericifera, white, summer.
- Argyreia speciosa, rose, st. July.
- Aristolochia brasiliensis, purple, st., July.
- caudata, red, st., June.
- Duchartrei, brown and yellow, st., January.
- floribunda, purple, red and yellow, st., July.
- gigas, purple, st., June.
- goldieana, greenish and yellow, st., July.
- odoratissima, purple, st., July.
- Asparagus decumbens, white, foliage, grh.
- medeoloides, white, foliage, grh.
- plumosus, white, foliage, grh.

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- Asparagus retrofractus*, white, foliage, grh.
 — *scandens*, white, foliage, grh.
 — *sprengeri*, foliage, grh.
Asystasia scandens, cream, st., July.
Batatus or *Ipomœa bignonioides*, purple, grh., or st., July.
Bauhinia corymbosa, pinkish, st., summer.
Beaumontia grandiflora, white and green, st., July.
Berberidopsis corallina, crimson, hardy or h.h., summer.
Bignonia capreolata, red and orange, grh., July.
 — *Chamberlaynii* (now *Anemopæigma* C.), yellow, st., summer.
 — *Cherere*, orange, summer.
 — *Clematis*, white, yellow and red, grh., summer.
 — *magnifica*, crimson, st., summer.
 — *speciosa*, yellow, grh., July.
 — *venusta*, crimson, st., autumn.
Billardiera longiflora, yellow passing to purple, grh., summer.
 — *scandens*, cream, passing to purple, grh., summer.
Bomarea Carderi, rose, spotted purple brown, h.h., or grh., autumn.
 — *oligantha*, red and yellow, h.h., or grh., autumn.
Bougainvillea glabra, pink, st., or int., summer.
 — *spectabilis*, red and scarlet, int., summer.
 — — *superba*, rich rose.
Brachysema latifolium, crimson, grh., spring.
Canavalia ensiformis, purple, st., July.
Ceropegia elegans, purple, st., summer.
Cestrum aurantiacum, yellow, grh., June.
 — *elegans*, carmine, grh., January, etc.
Chorizema varium Chandleri, yellow and red, grh. June.
Cissus discolor, variegated leaves, st.
Clematis (*see* separate list).
Clerodendron splendens, scarlet, st., summer.

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- Clerodendron Thomsonæ*, scarlet, st., summer.
 ——— *Balfouri*, crimson, st., summer.
Clianthus puniceus, scarlet, grh., or h.h., summer.
Clitoria heterophylla, blue, st., July.
 ——— *ternata*, blue and white, st., July.
Cobæa scandens, purple, grh., summer.
Combretum elegans, yellow, st., May.
 ——— *purpureum*, crimson, st., August.
Convolvulus pannifolius, blue, grh., summer.
 ——— *mauritanicus*, blue, grh., or h. hdy., summer.
Cryptostegia grandiflora, red-purple, st., July.
Datura or *Brugmansia suaveolens*, white, grh., August.
 ——— *arborea*, white, grh., August.
Dipladenia or *Echites atropurpurea*, purple, st., summer.
 ——— *boliviensis*, white and yellow, st., summer.
 ——— *eximia*, rose-red, st., summer.
 ——— *Sanderi*, rose, st., summer.
 ——— *splendens*, carmine rose, st., summer.
Dolichos Lablab, rose and purple, grh., July.
Eccremocarpus scaber, scarlet, grh., July (*syn.* *Calam-
 pelis scabra*).
Echites Franciscea sulphurea, yellow, st.
Ficus stipulata, foliage, grh., or h.h. (*syn.* *Ficus
 repens*).
Fuchsia, in variety.
Gloriosa superba, orange and red, st., July.
Gompholobium polymorphum splendens, crimson, grh.,
 June.
Hardenbergia comptoniana, purple, grh., March.
Hibbertia dentata, dark yellow, grh., summer.
Hidalgoa Wercklei, scarlet and yellow, autumn.
Holboellia latifolia, purple or greenish, h.h., March.
Hovea Celsii, blue, grh., June.
Hoya carnosa, pinkish-white, grh., July.
 ——— *globulosa*, creamy-yellow, st., April.
 ——— *imperialis*, red-brown, st., June.

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Ipomœa Bona-Nox, white, July.

— *Horsfalliæ*, rose, st., October.

— *Learii*, blue, st., September.

— *Purga*, Jalap, purple-rose, st., or grh., August.

— *rubro-cærulea*, white, red, and blue, st., September.

Jasminum Duchesse d'Orleans, white, st., summer.

— *grandiflorum*, white, grh., summer.

— *Sambac fl. pl.*, white, st., autumn.

— *odoratissimum*, white, grh., summer.

Kennedyia prostrata Marryattæ, scarlet, grh., April.

— *rubicunda*, dark red, grh., June.

Lantana Camara, violet, st. or grh., June,

Lapageria rosea, rosy-crimson, grh., or h.h., summer.

— — *alba*, white, grh., or h.h., summer.

— — *superba*, crimson, grh., or h.h., summer.

Littonia modesta, orange, st., April.

— — *superba*, red, st., April.

Lonicera sempervirens, red and yellow, grh. or hdy., spring.

Luculia gratissima, pinkish-white, int., autumn, etc.

Mandevilla suaveolens, white, h.h. or grh., June.

Manettia bicolor or *lutea-rubra*, scarlet and yellow, int., March.

Maurandya barclayana, various, grh., h.h., summer.

Mikania scandens, yellowish white, h.h. or grh., August.

Millettia megasperma, purple, grh., August.

Mimosa marginata, purplish, grh. or st., summer.

Myrsiphyllum asparagoides (*see Asparagus medeoloides*), July.

Oxypetalum cæruleum, blue, int. or st., summer.

Passiflora alata, red, pink and white, st., June.

— *amabilis*, red, st., May.

— *Buonopartea*, red, blue and white, st., June.

— *cærulea*, grh. or hdy., August.

— — *Constance Elliott*, white.

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Passiflora Campbelli, purple.

— *edulis*, white, tinged purple, fruit edible, st., July.

— *quadrangularis*, white, red and violet, fruit edible, st., August.

— *racemosa*, red, st., June (*syn. princeps*).

Paullinia thalictrifolia, foliage, st.

Pergularia odoratissima, greenish yellow, st., June.

Petrea volubilis, purple, st., July.

Physostelma Wallichii, yellow and green, st., May.

Piper porphyrophyllum, foliage, st. (*syn. Cissus*).

Pleroma or *Tibouchina semidecandrum* or *macranthum*, violet-purple, grh., July.

Plumbago capensis, blue, grh. or st., autumn.

— *scandens*, white, st., July.

Quisqualis indica, orange or red, st., June.

Randia macrantha, pale yellow, st.

Rhodochiton volubile, red, grh., June.

Rubus australis, pink or white, h.h., summer.

Ruscus androgynus, foliage.

Semele androgyna, foliage, grh.

Senecio macroglossus, pale yellow, grh., winter.

Smilax salicifolia variegata, leaves variegated, st., summer.

— *ornata*, leaves silvery, grh.

Solandra grandiflora, pale yellow, st., May.

Solanum jasminoides, white, grh. or hdy., August.

— *seafortianum*, lilac, st., autumn.

— *Wendlandii*, lilac-blue, summer.

— (*see also Hardy Climbers*).

Sollya heterophylla, blue, grh., July.

Stephanotis floribunda, white, st., May.

Swainsonia coronillifolia, red, grh., July.

— — *albiflora*, white.

Tacsonia exoniensis, rose and violet, grh., summer.

— *insignis*, crimson, violet, etc., int., summer.

— *manicata*, scarlet, st. or int., July.

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- Tacsonia mollissima*, pink, grh., September.
 — *Van Volxemii*, scarlet, st. or int., summer.
Tecoma filicifolia, foliage, st.
 — *grandiflora*, orange-red, grh., July (*syn.* *Bignonia grandiflora*).
 — *jasminoides*, pink, grh., summer.
Testudinaria elephantipes, greenish-yellow, grh., July.
Thunbergia alata, yellow, st. or grh., summer.
 — *coccinea*, red, st. or grh., summer.
 — *fragrans*, white, st. or grh., scented, summer.
 — *grandiflora*, blue, st. or grh., summer.
 — *laurifolia*, blue, st. or grh., summer.
Trachelospermum or *Rhynchospermum jasminoides*, white, grh., July.
Tropæolum azureum, blue and white, grh., October.
 — *Jarrattii*, orange-red, yellow and brown, grh., summer.
 — *lobbianum*, various, grh., summer.
 — *tricolorum*, orange-scarlet and black, h.h., summer.
 — *tuberosum*, yellow and red, h.h., autumn.
 * *Vitis gongyloides*, interesting.

SELECTION OF CLIMBING ROSES

[NOTE.—A. = Ayrshire, Boursault or other free and rapid growers. B. = Bourbon. H. P. = Hybrid Perpetual. H. T. = Hybrid Tea. N. Noisette. P. = Polyantha. T. = Tea.]

Acidalie, white, A.	Belle de Baltimore, flesh, A.
Aglaia, yellow, P.	Belle Lyonnaise, canary, T.
Aimée Vibert, white, N.	Bennett's Seedling, white, A.
Alister Stella Gray, yellow, N.	Blairii No. 2, blush pink.
Amadis, crimson, A.	Bouquet d'Or, yellow, T.
Ards Rover, crimson, H. P.	Brunoni, white, single.
Bardou Job, crimson, semi-double, H. T.	— flore pleno, double.
	Celine Forestier, yellow, N.
	Charles Lawson, rose, B.

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Cheshunt Hybrid, cherry carmine, H. T.	Lamarque, lemon, N.
Claire Jacquier, yellow, P.	Leuchtstern, rose, whiteeye, P.
Climbing Capt. Christy, flesh-white, H. T.	L'Idéale, yellow and red, N.
Climbing Charles Lefebvre, velvet crimson, H. P.	Longworth Rambler, light crimson, A.
Climbing Cramoise Supé- rieure, crimson (China).	Madame Alfred Carrière, white, P.
Climbing Devoniensis, creamy white, T.	Madame Berard, salmon and yellow, T.
Climbing Kaiserin Augusta Victoria, primrose, H. T.	Madame Isaac Pereire, car- mine, B.
Climbing La France, pinkish rose, H. T.	Madame Moreau, copper- yellow.
Climbing Niphetos, white, T.	Madame Pierre Cochet, golden-yellow, T.
Climbing Perle des Jardins, pale yellow, T.	Manda's Triumph, white (Wichuraiana).
Climbing Victor Verdier, cherry rose, H. P.	Marechal Niel, yellow, N.
Coupe d'Hebe, pink.	Mrs Paul, white, shaded peach, B.
Crimson Rambler, crimson, P.	Ophirie, apricot, N.
Dundee Rambler, white, pink edge, A.	Pink Roamer, pink (Wich- uraiana).
Euphrosine, red, P.	Prairie Belle, white, A.
Félicité Perpetue, white, A.	Princess Marie, rose, A.
Fortune's Yellow, yellow, flaked carmine.	Polyantha grandiflora, white, P.
Gloire de Dijon, buff and orange, T.	Psyche, pink and yellow, P.
Gloire des Rosomanes, crimson.	Reine Marie Henriette, cherry red, H. T.
Helene, violet, single, P.	Reine Olga de Wurtem- burg, red.
La Guirlande, white, A.	Reve d'Or, yellow, T.
	Ruga, pale flesh, A.

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Schneelecht, white (Rugosa).	William Allen Richardson, orange yellow, N.
South Orange Perfection, white, tipped pink (Wichuraiana).	Waltham Climber No. 1, red, H. T.
Souvenir de Joseph Metral, red, H. T.	Waltham Climber No. 3, red, H. T.
Thalia, white, P.	wichuraiana, white. White Pet, white, P.

SELECTION OF CLIMBING CLEMATISES

Coccinea and Hybrids.

coccinea, scarlet, July.	Duchess of Albany, pink.
Countess of Onslow, purple scarlet.	Sir Trevor Laurence, crimson.
Duchess of York, blush pink.	Ville de Lyon, carmine.

Florida Group.

florida, white, April, etc.	Duchess of Edinburgh, white, double.
Barillet Deschamps, mauve, double.	John Gould Veitch, lavender, double.
Beauty of Woking, silver grey, double.	

Jackmanni Group.

Jackmanni or purpurea, violet purple.	Mrs Baron Veillard, lilac- rose.
Jackmanni superba, darker.	Princess of Wales, puce.
Mad. E. André, bright red.	Smith's Snow-white, white.

Lanuginosa Group.

Beauty of Worcester, violet.	lanuginosa, blue.
Enchantress, white, double.	Louis Van Houtte, purple.
Fairy Queen, flesh, barred white.	Venus Victrix, lavender, double.
Henryi, creamy white.	

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Patens Group.

Fair Rosamund, blush.	Miss Bateman, white.
Lady Londesborough, silver-grey.	Miss Crawshay, pink.
Lord Londesborough, mauve.	Mrs G. Jackman, white.

Viticella Group.

Hendersoni, purple.	Viticella purpurea plena
Lady Bovill, grey blue.	elegans, purple, double.
Viticella grandiflora, purple.	— rubra grandiflora, red
— alba, white.	purple.

SELECTION OF OTHER SPECIES

alpina (<i>syn.</i> Atragene Alpina), blue, summer.	indivisa, white, spring, grh.
calycina, pale yellow, February.	— lobata, white, grh.
crispa, lilac, September.	montana, white, May.
Flammula, white, July, etc.	— grandiflora, larger.
	orientalis or graveolens, yellow, August.

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